ED 416 076 DISSECTION & SCIENCE FAIRS. INFORMATION PACKET.

1 OF 2 NATIONAL ANTI-VIVISECTION SOCIETY, CHICAGO, IL.

97 102P.

DOCUMENT RESUME

ED 416 076 SE 061 092

TITLE	Dissection & Science Fairs. [Information Packet.]
INSTITUTION	National Anti-Vivisection Society, Chicago, IL.
PUB DATE	1997-00-00
NOTE	102p.
AVAILABLE FROM	National Anti-Vivisection Society, 53 W. Jackson, Suite 1552, Chicago, IL 60604.
PUB TYPE	Reports - General (140)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Animals; Biological Sciences; *Dissection; Elementary Secondary Education; Higher Education; Instructional Materials; *Laboratory Animals; Medical Research; Science Education; *Science Fairs; Science Teachers; *Veterinary Medicine
IDENTIFIERS	Animal Welfare; *Vivisection

ABSTRACT

This collection of pamphlets and articles reprinted from other National Anti-Vivisection Society (NAVS) publications was compiled to address the issues of classroom laboratory dissection and the use of animals in science fair projects. Three of the pamphlets contained in this packet are student handbooks designed to help students of elementary, high school, and college age resist dissection in the classroom. Another pamphlet addressed to science teachers explains why many students today object to the practice of dissection. A science fair brochure explains science fair regulations, recent changes in rules to improve treatment of animals, and sample winning projects that caused pain to animals. The articles on dissection cover such topics as using frogs in dissection, why instructors adhere to dissection, dealing with ridicule, why dissection is a flawed tool in education, the connection between dissection and animal cruelty, and NAVS alternative models. Two science fair articles describe cruelty to animals in winning projects using live-animal experimentation at two recent international science fairs sponsored by high-tech corporations. (PVD)

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ED 416 076

Dissection & Science Fairs

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National Anti-Vivisection Society

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SAYING NO TO DISSECTION

A HANDBOOK FOR ELEMENTARY STUDENTS

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N A V S

Dear Elementary School Student:

In your science classes you may be asked to "dissect" an animal or to do "dissection." "Dissection" means cutting apart and studying dead animals. These animals–frogs, cats, pigs, mice, worms, starfish, crayfish–were all alive once. They were killed to be used in dissection.

Millions of animals are killed each year for dissection. Many of these animals–such as frogs, earthworms, crayfish and perch (a kind of fish)–are collected from their natural environments. In the process, these environments are damaged. Many frog species are becoming extinct because they are killed in such large numbers.

Cats are also used for dissection. A recent investigation of certain biological supply houses showed that cats used for dissection were killed in very painful ways. Mice, rabbits and pigs are raised in huge "factories," and killed for dissection.

Cutting up animals for science education is harmful in many ways. It can teach us that animal life is unimportant and that animals exist only for our own use. It can either encourage us to "turn-off" our feelings of care and concern for animals, or to drop out of science altogether, rather than take part in this killing. "Life Science" is the study of life forms and how they are all connected. It becomes a "death science" when animals are killed for science education.

If the idea of harming animals makes you sad or uncomfortable, don't be ashamed or afraid. It's okay to care about animals. You are not alone. Thousands

of other students, from elementary school through college, are bothered by dissection and have chosen not to do it.

In fact, in a number of states (California, Florida, New York, and Pennsylvania) there are laws to make sure that students who have strong feelings against dissection don't have to dissect, or watch the teacher or other students dissect. These laws also state that a student's grades can't be lowered because the student refuses to dissect–the student must be allowed to learn about science in other ways. These other ways are called "alternatives." Some alternatives and the companies that supply them are described at the end of this booklet.

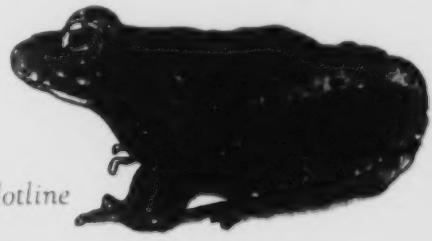
Remember, it's okay to care about animals. ***You have a right to have your feelings respected.*** If dissection or experimenting on animals in your class bothers you, let your parents know. Explain to them how you feel, and ask for their support.

We at the NAVS Dissection Hotline hope this booklet is helpful. If you need more help or information, please call us at 1-800-922-FROG (3764). There is no charge for this telephone call.

Your friend,

Pat Graham

Pat Graham
Director, NAVS Dissection Hotline



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Dear Concerned Parent:

Your child's study of science is intended to open his or her mind to a world of discovery, and hopefully, to spark a lifetime of curiosity in scientific topics. At the National Anti-Vivisection Society (NAVS) we believe that *how* your child learns may be as important as *what* they learn.

By requesting information from the NAVS Dissection Hotline, your child has expressed concern about participation in dissection exercises. As a caring parent, please support your child's courageous stand and respect their wish to avoid bringing harm to a innocent animal. Whether for altruistic reasons or a result of common sense, your child has exhibited a mature and compassionate realization that killing should not be part of the process of learning about life.

Although dissection has been a standard in "life" science instruction for decades, today there is a vast array of innovative alternatives in education. Studies have shown that students who use these alternatives learn at least as well, and often better, than those students who dissect animals. Today even medical school students can complete their education without harming animals.

This booklet has been prepared to help you and your child work with their teacher to come up with solutions that respect the ethical concerns of everyone involved without compromising academic standards. Please call us if you have any questions or need additional information. Thank you for supporting your child's efforts to protect animals from needless suffering.

Sincerely,

Mary Margaret Cummiff

Peggy Cummiff, Executive Director
The National Anti-Vivisection Society

HERE ARE SOME THINGS YOU CAN DO IF YOU DON'T WANT TO DISSECT.

TALK TO YOUR TEACHER.

Most teachers care about their students and are willing to help. Tell your teacher how you feel. Be sure your teacher knows you are not simply trying to get out of work. Offer to do an alternative project of the same amount of time as the dissection project.
Tell your teacher that a lifelike model of a frog is available on loan from the National Anti-Vivisection Society. The model can be used as an innovative teaching tool. Call 1-800-888-NAVS (6287).

TALK TO OTHER STUDENTS.

They may feel the way you do. You may want to start a club or a support group. Remember, there is strength in numbers. If a lot of students feel the same way, a petition may be a good idea. You should present the petition to your teacher and your principal. This will show them that a number of students in your school share your feelings and want an alternative to dissection.

WRITE A LETTER TO THE SCHOOL NEWSPAPER.

Write a letter to the editor, or an article explaining how you feel about dissection. Ask other students to write letters, too.

ASK YOUR PARENTS TO HELP.

They can contact other parents, either individually or through groups such as the PTA. They can even form their own support groups. Teachers, principals and school board members usually listen to concerned parents.

HOW TO COMMUNICATE YOUR FEELINGS AND BELIEFS.

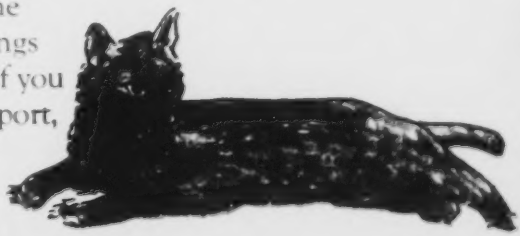
When you ask to be given an alternative project, your teacher may agree with you. However, some teachers and school principals believe dissection is helpful, or even necessary, to learn science. It's okay to disagree, but please communicate your feelings in a respectful way.

It's also important that you remain calm when talking with a teacher or principal who has ideas differing from yours. Remember, just because your beliefs are different, it doesn't mean your beliefs are wrong. You have the right to have your feelings and beliefs respected. If you have your parents' support, you should ask one of them to be with you when you explain your beliefs to your teacher or principal. However, you do not have to justify your beliefs to have them respected.

Here's a skit showing how a talk between a teacher and a student might go. It's based on questions that students are often asked. Don't try to memorize the answers. Let the skit be a guide to help you make your own replies.

TEACHER: Everyone has to dissect. It's just a part of learning science.

STUDENT: *Not everyone. Many schools allow alternatives to dissection.*



TEACHER: The hands-on experience of dissection and animal experimentation are the best ways to learn biology.

STUDENT: *Many teachers disagree. Modern, non-harmful teaching methods and materials are available. They make dissection unnecessary. Students who believe it's wrong to harm animals may learn more from models and diagrams that don't cause pain to animals.*

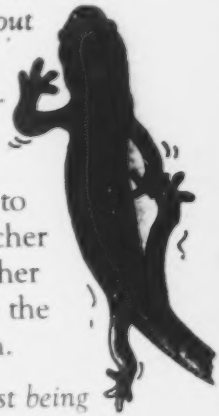
TEACHER: You don't have to worry about harming the animals. The animals are already dead.

STUDENT: *If the animals are dead, someone harmed them, because someone killed them. Killing is harming. I believe that animals don't have to be harmed in order for me to learn biology.*

TEACHER: Do you eat meat? Do you wear leather?

(If you are vegetarian, and if you don't wear leather, the answer to these questions is an easy "NO"! Whether you are vegetarian or not, the following response is a good one.)

STUDENT: *Most people who eat meat wouldn't eat their pets. Most people who wear leather wouldn't make shoes from their pets. Everyone, even people who eat meat or wear leather, draws the line somewhere. I draw the line at dissection. I know there are alternatives which can help me learn about science without harming animals.*



TEACHER: You don't have to dissect. The teacher or one of the other students will do the actual dissection.

STUDENT: *Just being there makes me a part of it. I'd like to be excused during dissection. Please give me an alternative science project.*

TEACHER: If I allow you not to dissect, what is to stop all students from refusing to dissect?

STUDENT: *Any student who honestly objects to dissection should be allowed to do an alternative project.*

TEACHER: You are only a child. The school system can't allow students to decide what they will or will not do in class. The school always has your education and best interests in mind.

STUDENT: *Although I'm a child, I believe that the lives of these animals should be respected. Dissection takes this respect away. It also takes away my right to respect animals' lives. I know that other school systems offer alternatives to dissection. California, Florida, New York, and Pennsylvania even have state laws saying that students have the right not to dissect. I only ask for the same respect that other students, in other parts of the country, receive.*

TEACHER: If students are excused from dissecting in science class, what will keep students from refusing to run in gym class?

STUDENT: *These are two different issues. I'm not trying to get out of work. I will be glad to do an alternative project requiring just as much time and effort. I think a teacher can tell whether a student is serious, or is simply trying to get out of work.*

ALTERNATIVE LEARNING MATERIALS.

There are many alternatives to animal dissection. They can be as simple as field trips to explore local plants and animals. While models and computer programs may appear expensive, they can be used for many years, by many students.

In comparison, animal parts are also expensive and can only be used once, and usually by only one to three students.

The following teaching materials are samples of what is available. We have selected only materials that do not require animals to be killed to create them. You can suggest these materials to your teachers, principal or school board. ***Sources for these alternatives are listed on pages 13-14.***

These companies do not sell animals for dissection. We recommend that teachers order catalogs from these companies for more detailed information.

MODELS

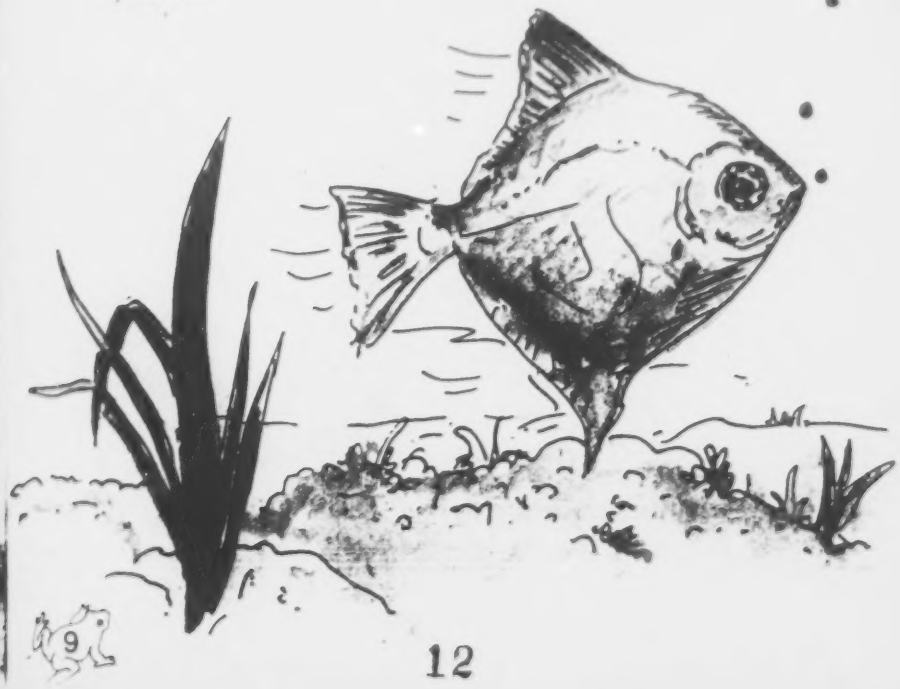
Frog, earthworm, grasshopper, fetal pig, perch, and human eyeball plastic models are available in relief and three-dimensional forms. Some models have removable parts and teachers' manuals. These models are available from Nystrom, National Teaching Aids and Denoyer-Geppert. A stuffed fabric frog with removable organs for very young children is available from Scideas. A very detailed lifelike frog model is available on a free loan basis from the National Anti-Vivisection Society.

CHARTS

Charts include animals and animal classification; lives of the fish, honeybee and rabbit; beneficial insects and birds; human anatomy and body systems; frog anatomy, development, reproduction, etc.; and earthworm, fish, snake, grasshopper, clam, starfish and crayfish anatomy. Charts are available from Denoyer-Geppert and Nystrom.

POSTERS

Colorful posters of animals, birds, butterflies, land and sea mammals, and fish are available from Anatomical Chart Company. Study prints of animal, insect and human anatomy are available from Milliken. Study prints include teachers' guides and pages for copying. They are available in large posters and in study print sets.



BOOKS ARE AVAILABLE.

ACTIVITY BOOKS, COLORING BOOKS

Activity books for students introduce a variety of projects and concepts. Among these are a series on scientific encounters by Good Apple; several life science series on animals, birds, insects, reptiles and amphibians from Good Apple and Milliken; science and nature project books from Dover, Addison-Wesley and Prentice Hall; coloring books with information on animals, butterflies, marine mammals, fish and reptiles from Dover and Houghton Mifflin (Peterson guide series). Some books contain transparencies, duplicating pages, crossword puzzles and teachers' guides.

TEACHER REFERENCE BOOKS

Nature guides from Simon & Schuster, Houghton Mifflin (Peterson Guides), Alfred A. Knopf (Audubon Guides), and Western (Golden Field Guides) describe many forms of animal life and their natural surroundings. **A Guide to Animal Tracking and Behavior** is available from Little, Brown. Denoyer-Geppert publishes a **Biology Resource Manual** (catalog # 8200) with copy masters and tests.

STUDENT NATURE GUIDES, REFERENCE BOOKS

Many nature guides are available for students. Among these are **Golden Guides** from Western, **Peterson First Guides** from Houghton-Mifflin, **Eyewitness** books from Knopf, **Field Guide to the Familiar** from Prentice Hall, the **Hidden Life Series** from Crown, and the **Step-Up Nature Books** from Random House.

Simon & Schuster publishes **The City Kid's Field Guide.** Human anatomy books for younger readers are available from Dover and Penguin.

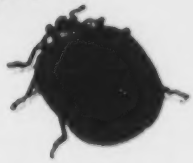
VIDEOTAPES

Subjects include human body systems; human growth; and the five senses. Also available are detailed studies of pond life, and many videotapes dipicting how different animals live and play. Tapes are nine to 32 minutes long, VHS format. Available from Focus Media and Nystrom.

COMPUTER PROGRAMS

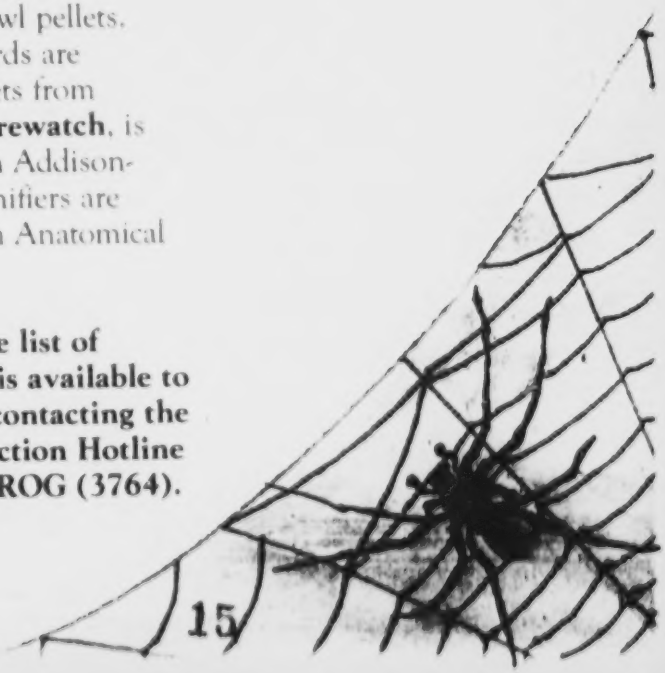
In "Operation Frog" a student can "dissect" a computer-simulated frog, examine the organs in detail and reconstruct the frog. Available from Scholastic. Other programs include: the human body, the animal kingdom and elementary biology from Queue; the study of insects; wildlife conservation; fish interaction and survival in a mountain lake; and how to identify animals, birds, trees and plants from Focus Media and Cambridge Development Lab. A human body lab with light and temperature probes to measure heart rate, lung capacity and responses to light, sound and touch is available from Cambridge Development Lab.

OTHER LEARNING MATERIALS



Many other alternatives exist: resource boxes and activity cards with project and teaching suggestions; **Naturewatch**, a book with 50 projects for young children; magnifiers to inspect insect and pond life; or simply going outdoors to study animal tracks and signs, or the small skeletons and materials found in regurgitated owl pellets. Boxes and cards are available in sets from Queue. **Naturewatch**, is available from Addison-Wesley. Magnifiers are available from Anatomical Chart Co.

A complete list of alternatives is available to teachers by contacting the NAVS Dissection Hotline 1-800-922-FROG (3764).



COMPANIES THAT PROVIDE ALTERNATIVES.

Addison-Wesley Publishing Company, Inc.
1 Jacob Way
Reading, MA 01867
(800) 447-2226

Anatomical Chart Company
8221 Kimball Avenue
Skokie, IL 60076
(800) 621-7500

Cambridge Development Laboratory
86 West Street
Waltham, MA 02154
(800) 637-0047

Crown Publishing Company, Inc.
400 Hahn Road
Westminster, MD 21157
(800) 726-0600

Denoyer-Geppert Science Company
5225 Ravenswood Avenue
Chicago, IL 60640-2028
(800) 621-1014 or
(312) 561-9200

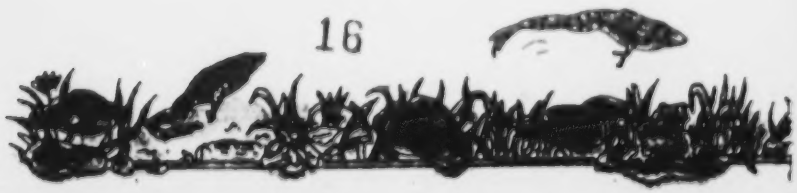
Dover Publications, Inc.
31 East Second Street
Mineola, NY 11501
(516) 294-7000

Focus Media
485 S. Broadway, Suite 12
Hicksville, NY 11801
(800) 645-8989

Good Apple, Inc.
P.O. Box 299
Carthage, IL 62321-0299
(800) 435-7234

Houghton Mifflin Company
Wayside Road
Burlington, MA 01803
(800) 225-3362

Alfred A. Knopf, Inc.
400 Hahn Road
Westminster, MD 21157
(800) 726-0600



Little, Brown and Company
200 West Street
Waltham, MA 02154
(800) 759-0190

Milliken Publishing Company
1100 Research Boulevard
St. Louis, MO 63132-0579
(800) 643-0008

National Teaching Aids, Inc.
1845 Highland Avenue
New Hyde Park, NY 11040
(516) 326-2555

Nystrom, a Division of Herff Jones, Inc.
3333 North Elston Avenue
Chicago, IL 60618-5898
(800) 621-8086

Penguin U.S.A.
Consumer Sales Dept.
P.O. Box 999
Bergenfield, NJ 07621
(800) 253-6476

Prentice Hall Publishers
200 Old Tappan Road
Old Tappan, NJ 07675
(800) 223-1360

Queue, Inc.
338 Commerce Drive
Fairfield, CT 06430
(800) 232-2224 or
(203) 335-0906 in CT and Canada.

Random House, Inc.
400 Hahn Road
Westminster, MD 21157
(800) 726-0600

Scholastic, Inc.
2931 East McCarty Street
Jefferson City, MO 65101
(800) 541-5513

Scideas
516 West Ridgeway Street
Warrenton, NC 27589

Simon & Schuster, Inc.
200 Old Tappan Road
Old Tappan, NJ 07675
(800) 223-2336

Western Publishing Company, Inc.
Donovan Distributors
732 Clinton Street
Waukesha, WI 53186
(800) 236-7123

THE NAVS DISSECTION HOTLINE

1-800-922-FROG
(3764)

NAVS
CREDIBLE ANSWERS FOR A CRUELTY-FREE WORLD

The National Anti-Vivisection Society
53 West Jackson Blvd., Suite 1552, Chicago, IL 60604

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Designed and illustrated by Linda Frothingham

OBJECTING TO DISSECTION

A HIGH SCHOOL STUDENT'S HANDBOOK

NAVS

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Dear Student:

Whether you pursue a career in science or medicine, agriculture or business, or your ambitions lead you to an entirely different field, the lessons you learn today will influence the rest of your life. You need to understand how the world around you works, what makes your body healthy, and how to protect the earth. At the National Anti-Vivisection Society, we believe that how you learn is as important as what you learn. In your science classes there are better ways to learn about life than by dissecting animals.

By refusing to dissect, you have taken a brave stand in defense of animals. You have the right to refuse to do something you believe is wrong. And your decision deserves respect from your classmates, teachers and parents.

We hope that this book provides you with the information you need to support your compassionate decision. We understand that your raising an objection to dissection can be difficult. Rest assured that you are not alone in your concerns. Every week, the NAVS Dissection Hotline receives hundreds of calls from like-minded students. Please call us if you have any questions or need additional assistance. Encourage your parents and teachers to call us, too, for current information about innovations in science education which do not inflict suffering on animals.

Be proud of having the conviction to say "no" to dissection. Thank you for standing up for what you believe and being brave enough to protect those unable to defend themselves. We at the National Anti-Vivisection Society applaud your efforts!

Sincerely,

Mary Margaret Cunniff

Peggy Cunniff
NAVS Executive Director

Dear High School Student:

By contacting the NAVS Dissection Hotline, you've already taken the first step toward protesting animal dissection in the classroom. This booklet is designed to help you take the first step down the path to an ethical scientific education.

Refusing to dissect animals can be a difficult choice. I know from experience. In 1987 my daughter, Jenifer, decided she didn't want to dissect a frog in her high school biology class. Jenifer's simple ethical objection spiraled into a two-year struggle to establish her right not to harm animals in the classroom.

In California, Florida, New York, and Pennsylvania, students in grades kindergarten through high school have now won the right to refuse to dissect, harm or kill animals in the classroom and the right to substitute an alternative project. Other states have policies that guarantee a student's right to refuse dissection. I believe that all students deserve to have their rights respected.

We designed this handbook to assist students in taking a stand on their beliefs about humane education and respect for the environment.

If after reading this booklet you have more questions about how to proceed, feel free to call me at our toll-free number, 1-800-922-FROG (3764).

Sincerely,

Pat Davis

Pat Davis
Director, NAVS Dissection Hotline

TO DISSECT... OR OBJECT?

A question of conscience.

When dissection was introduced into the educational curriculum in the 1920s, it was thought to be a good learning tool in the study of anatomy, physiology and the theory of evolution. Today, more sophisticated teaching methods have been developed which can replace dissection and save animals.

But dissection is a big business. Millions of animals a year are killed to be dissected for educational experiments. Many of these animals, such as frogs, earthworms, crayfish and perch, are collected from their natural environments. In the process, their habitats are decimated and entire ecologies are threatened. A recent investigation of certain biological supply houses showed that cats obtained for dissection suffered very painful and cruel deaths.

Even more destructive is the desensitizing effect of mutilating and dismembering animals in the name of education. Somehow the study of a "life science" – meant to instill wonderment and respect for life–has become the science of death. Dissection teaches students that animal life is expendable and unimportant. As a result, some of the best potential scientists, who have a deep respect for animal life, may end up dropping out of a field they love because they refuse to take part in senseless killing.

Despite the availability of

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numerous educational alternatives (ranging from detailed models to computer simulations), animal dissection remains a fixture in most high school biology, anatomy and physiology courses. Year after year, millions of animals die to demonstrate basic anatomy and physiology which could easily be taught by more humane means.

Recently, students around the country have begun to speak out against this misguided practice. As student objections to dissection become more vocal and visible, the movement toward non-animal alternatives grows.

Every time a student exercises his or her right **not** to dissect animals, the awareness of the entire academic community is increased. By exercising your right as a student, you can help create an environment where respect for animals is considered the norm.

SAYING NO TO DISSECTION

Guidelines to consider when raising your objection to your teacher.

Sometimes the simplest thing to do is to ask your parent(s) to write a note to your teacher. Often a note from a supportive parent is all that is needed to make teachers or administrators more accommodating. Here is a sample note:

Dear_____,

Please excuse _____ from participating in or observing animal dissection. She/he is willing to do an alternative project of equal time and effort.

(signed)
Mr. and or
Mrs./Ms._____

Phone number:_____

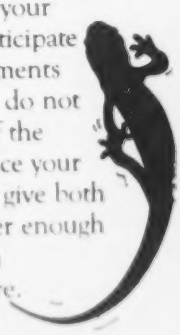
However, it is not necessary to get your parent's support. If you want to proceed on your own, here are some guidelines.

1. KNOW YOURSELF

Examine your motives and decide how far you are prepared to go in order to establish your right not to dissect. Are you willing to present your case to your teacher and principal? Find or design your own alternative? Take legal action? Accept your limits, given the risks involved, and adjust your goals accordingly.

2. VOICE OBJECTIONS EARLY

Before the term starts, or as soon as possible thereafter, ask your teacher whether you will be expected to dissect. Find out precisely what you will be asked to do. Don't rely on your teacher to give you advance warning. Tell your teacher of your intention not to participate in dissection experiments as soon as possible; do not wait until the day of the dissection lab to voice your objection. This will give both you and your teacher enough time to work out an acceptable alternative.



3. BE FIRM, BE CALM

State your objections calmly and clearly, and be prepared to discuss your reasons for refusing

to dissect. Never approach your teacher in an arrogant, self-righteous or confrontational manner. Presume that he or she may have a different belief system on the issue of animal use, and it is unlikely that you will change those views. On the other hand, stress that you do not wish this value system to be imposed upon you, as it conflicts with your ethical or spiritual beliefs.

4. SUGGEST ALTERNATIVES

Suggest reasonable alternatives that will meet the teaching goals of the course by some method that doesn't involve the harmful use of animals. There are many innovative alternatives available today. This could include writing a paper, preparing anatomical charts or studying diagrams, videos or models. The alternative project should take an equivalent amount of time and effort and be relevant to the course work. Be prepared to be tested on the same materials as other students, as long as the test itself does not include a practical dissection, or the use of dissected specimens. You should not be penalized for doing an alternative project. If you need specific suggestions for alternative course work, see "Alternatives to Animal Dissection" beginning on page 12 of this booklet, or call the NAVS Dissection Hotline.

5. ASK FOR A STRAIGHT ANSWER

Ask your teacher to respond promptly to your request for an alternative project so you'll have enough time to complete it. If you get a noncommittal or negative response, take your request to the head of the science department or the principal. Call on your parents for support if possible.

6. ORGANIZE OTHERS

Another approach is to organize like-minded students and go to your teacher or science department head as a group. Use the school media, especially the newspaper and radio station, as a forum for discussion. Introduce the ethical issues surrounding dissection at student government meetings. For information on passing a choice policy in your school or district, see page 11.

7. GET LEGAL ADVICE

The NAVS Dissection Hotline has had great success in negotiating with educational institutions on this issue. If you want legal advice or need to take legal action to defend your right to object to dissection, the NAVS Dissection Hotline can put you in touch with an attorney.

PUTTING IT INTO WORDS

Communicating your thoughts and feelings about animals and dissection.

TEACHER: Dissection is a course requirement, and you have to do what's required to pass the course.

STUDENT: *I'm willing to be tested on my knowledge acquired by means other than dissection. I'm willing to do as much work as anyone else–by studying books, computer programs, videos or models–to meet the standards of the course.*

Some students who refuse to dissect encounter resistance and even hostility from teachers, department heads and principals. When your ethical beliefs are challenged, it's important to be prepared. Here are some arguments that you might come up against if you object to taking part in dissection, along with some possible responses.

TEACHER: You don't have to kill the animal, it's already dead.

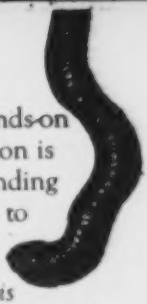
STUDENT: *Using an animal that was captured, raised or killed for dissection still contributes to the cruelty involved. Even if the animal was killed for other reasons (such as a dog or cat euthanized at an animal shelter), using the animal for educational purposes is supporting the notion that animals are merely "tools."*

TEACHER: You don't have to dissect, just watch.

STUDENT: *I can't watch someone else doing something that I think is wrong. Watching is still taking part in the dissection, and I am unwilling to do that. I would like to be excused from the lab while the dissection is taking place.*

TEACHER: You are just being squeamish. You should face your fears and make yourself do the dissection anyway.

STUDENT: *Refusing to dissect has nothing to do with being afraid. Being opposed to dissection is not a sign of emotional immaturity, but of compassion for animals.*



TEACHER: The hands-on experience of dissection is essential to understanding biology. It teaches us to understand life.

STUDENT: *Biology is supposed to teach respect for life, but dissection teaches us that animal life is cheap and expendable. I can get "hands-on" experience by using detailed models of animal anatomy, observing live animals, or dissecting plants. Also, some people learn more from clear, detailed diagrams or computer simulations than from animal specimens. Even many medical schools no longer require the use of animals in their classroom.*

TEACHER: If one student is allowed to refuse to dissect, what is to stop all students from doing so?

STUDENT: *Any student with sincere objections to dissecting should have his or her beliefs respected. Many schools have allowed alternatives for a long time without any problems.*

TEACHER: What if a student of one race refuses to sit next to a student of another race? What if students decide they don't want to take part in gym class? If I give in to you, I will have to give in to other students on other issues.

STUDENT: *It isn't fair to compare me to a bigot or a student who doesn't want to run in gym class. My objection to dissection is based on moral principles. This is completely different from a student with racial prejudices or one who is trying to avoid class work. A teacher needs to discriminate between students with moral objections and those who simply want their own way.*

TEACHER: You are not a vegetarian (or you wear leather shoes), so therefore you are not entitled to object to dissection.

STUDENT: *I have the right to draw the line where my conscience dictates, and to have my beliefs respected. Some people believe that it is necessary to use animals for food (or clothing) while at the same time believing it is wrong to eat dogs and cats, or to hunt. Everyone draws the line somewhere, and because of my moral beliefs, I draw the line at dissection.*

TEACHER: The teacher's academic freedom is at stake.

STUDENT: *My freedom of belief is what really is at stake. All the teacher is being asked to do is agree to allow an alternative procedure for me because I am morally opposed to dissection. Students who are willing to dissect can still do so. I know that other school systems offer alternatives to dissection. California, Florida, New York, and Pennsylvania even have laws saying that students have the right not to dissect. I only ask for the same respect that other students receive, in other parts of the country.*

PUTTING IT IN WRITING

When you refuse to dissect, it may be necessary to send letters to your teacher, science department head and, if necessary, your principal in order to formally explain your beliefs. Here are some suggestions for writing these letters.

- Keep it short and to the point.
- Do not be defensive or argumentative.
- Stick to the issue, i.e. your right to have your beliefs respected, and your willingness to perform an alternative project.
- Be sure to include a statement as to why you feel dissection violates your ethical or spiritual beliefs.
- Provide your professor or department head with suggested alternatives, if you can.
- Ask them to promptly reply to your request to do an alternative project.
- State your willingness to commit an equivalent amount of time and energy.
- Always keep copies of your letters for your own file, as these will be important if you ultimately take legal action. You should always keep a diary or written summary of your actions. Include dates, times and subjects of conversations, as well as people involved.

PASSING A STUDENT CHOICE POLICY IN YOUR SCHOOL OR DISTRICT

Many students want to pass a student choice policy in their own school or school district. Here are some suggestions:

1. Start a petition and collect as many signatures from other students, parents, and teachers as possible. The petition should be short and simple. You may want it to read as follows:

"We request that _____ school (or School District) institute a formal policy whereby all students are given, without penalty, the option of a non-animal alternative to dissection."

2. Prepare to make a presentation requesting alternatives. This can be done in the form of a letter. Make it clear that "alternatives" do not include dropping the class, taking a lower grade, watching the teacher or another student dissect, or being tested using dissected specimens. Some points you may want to make in your presentation:

- Students have a right to have their feelings and beliefs respected. Many schools allow alternatives to dissection, and four states have passed laws protecting the student's right to a humane alternative.
- Offering alternatives encourages an enthusiasm for science. Many students avoid science classes because of dissection requirements.
- Many innovative alternatives to dissection exist and are more cost effective over time than dissection specimens.
- Recent investigations of several biological supply houses have demonstrated that we can never be sure dissection specimens are obtained in a humane manner. Many students object

to the cruelty involved in raising, capturing and killing animals for dissection purposes.

- Dissection is not necessary to science education. Even many medical schools no longer require the use of animals. Using alternative teaching methods encourages respect for life.

3. Make an appointment to meet with your school principal, or get on the agenda for the next school board meeting. Find out how long you will be allowed to speak.

4. When the student choice policy is approved, be sure it is formalized in writing. It is important that students are informed of their right to choose an alternative, and that alternatives are readily available.

There are many alternatives to animal dissection for teaching biology, anatomy, physiology.

The following teaching materials are samples of what you can suggest to your teacher, department head or principal. We have selected only those materials that do not require animals to be harmed or killed.

While some of these alternative materials may appear expensive, they can be used for many years, by many students. In comparison, animals are also expensive and can only be used once, and usually by only one to three students.

Each description lists the name of the company or other source where innovative educational materials can be obtained. Addresses and telephone numbers are listed at the end of this booklet under "Companies That Provide Alternatives." None of these sources sell animals for dissection. We recommend ordering catalogs from these companies for more detailed information. If you have a specific question or need that is not addressed here, please contact the NAVS Dissection Hotline toll-free at 1-800-922-FROG (3764).

ANATOMICAL MODELS

The National Anti-Vivisection Society has a **lifelike bullfrog model** available on a free loan basis. Call 1-800-888-NAVS (6287).

Three-dimensional vinyl zoological models of a frog, earthworm, grasshopper and perch are available from Nystrom.

Denoyer-Geppert makes the **Great American Bullfrog** with a dissectible heart.

National Teaching Aids offers **vinyl relief models** of a frog and earthworm, with removable, flexible organs and carrying case.

Human anatomy torso models with removable parts are available from Denoyer-Geppert, Nystrom, National Teaching Aids, Anatomical Chart Company and Medical Plastics Laboratory.

Models of individual organs and systems are available from Nystrom, Denoyer-Geppert, Anatomical Chart Company and Medical Plastics.

Redco Science makes individual **desktop plastic Drisect models** of nine body organs and systems, and two **Drisect comparative anatomy kits** of vertebrate hearts and brains.

Denoyer-Geppert, Anatomical Chart Company and Medical Plastics have a wide selection of **plastic skeletons and skulls**.

VIDEOTAPES, VIDEODISCS AND SLIDES

A video, **Advances in Humane Education: Alternatives in Biology** from the National Anti-Vivisection Society (NAVS) gives an overview of many new methods that replace animal dissection. Available on a free-loan basis, or for purchase from FilmComm.

Videotapes on human anatomy are available from Teaching Films, Films for the Humanities and Sciences, and Denoyer-Geppert (to accompany their Know Body torso model). Focus Media offers a 3-part "Your Body" series, and videos on

mitosis and meiosis, DNA, evolution and natural selection.

A 3-D imaging videodisc on human anatomy, "Atoms to Anatomy", and a videodisc, "Cell Biology", are available from Videodiscovery.

Videos on plant, animal and marine biology are available from Films for the Humanities and Sciences.

Optical Data Corporation has a **laserdisc, Principles of Biology**, in its Living Textbook Series.

CellServ has a video explaining the **use of tissue culture** in biomedical research (and guides for CellServ kits).

CHARTS, POSTERS AND TRANSPARENCIES

Denoyer-Geppert publishes a large full-color chart series in biology, which includes frog anatomy and development, plant and animal cells, animal mitosis and meiosis, and many other animal anatomy charts; a Life Science Chart Series which includes human body systems and animal life histories; and a Science of Living Things Chart Series which has animals and animal classification charts.

Denoyer-Geppert also has a similar chart series on human physiology, human anatomy and a survey of human biology.

Nystrom sells the Frohse series of **anatomical charts**, the Jurica **zoology chart series** and their own 14-chart **human body set** which comes with an extensive teacher's guide. The Frohse and human body charts are markable.

Anatomical Chart Company has an extensive selection of **human anatomy and physiology charts**.

Biology overhead transparency atlases available from Denoyer-Geppert include: human organs and systems; apparatus of movement; histology; parasitology, reproduction and germ development in humans and animals; and a three-part series on the origin and evolution of life.

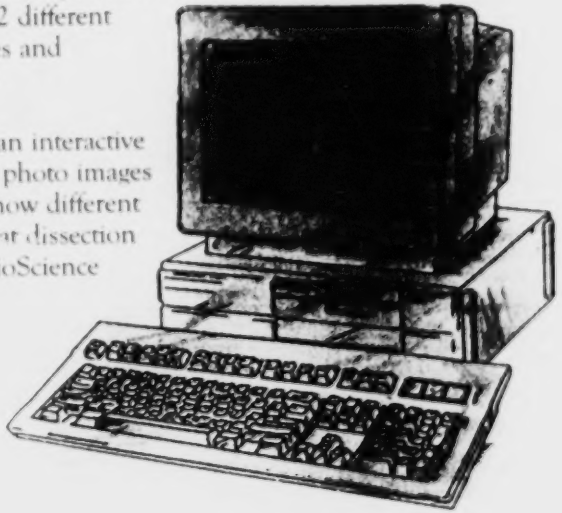
COMPUTER PROGRAMS

Queue and Cambridge Development Lab have a large variety of programs in basic and advanced biology; human anatomy, physiology and body systems; zoology and animal classification; and genetics and population dynamics (Apple, IBM, Mac). Cambridge Development Lab also offers Biology Lab, dissection guides for a frog, earthworm and others, written by a high school teacher (Apple, Mac); and the interactive Probe Series with a computerized probe to explore 22 different biological structures and functions (Apple).

The Rat Stack is an interactive "atlas" which uses photo images and diagrams to show different layers/stages of a rat dissection (Mac). Sheffield BioScience Programs.

Visifrog, a program in frog anatomy with a database and quizzes, is available from Ventura (Apple, IBM, Mac). Ventura also offers similar programs on marine life anatomy, fetal pig and earthworm anatomy, plant and animal cells, insects and protozoa.

Operation Frog allows a student to "dissect" a frog, examine the organs in detail, compare a human and frog heart, and reconstruct the frog (Apple, MAC, MS-DOS, Scholastic).



NON-ANIMAL PROJECTS

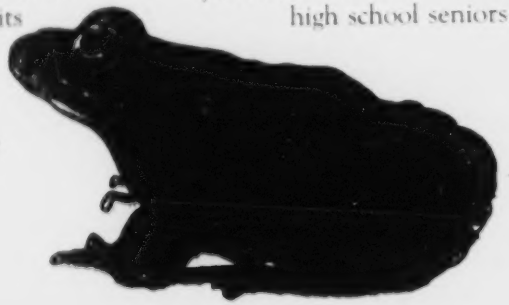
Several companies offer computer-based labs, utilizing students as subjects. Queue and Cambridge Development Lab offer the **Bio-feedback MicroLab** with several sensors to measure various body functions; and **The Body Electric** for examining brain waves (EEG), electrocardiograms (EKG) and muscle electrical activity (EMG) (both Apple). Queue also has a **Cardiovascular Fitness Lab** (Apple, IBM) and an **Experiments in Human Physiology** program (Apple).

Phipps & Bird manufactures the **BioMonitor (Harvard Biometer)**, a simplified EKG to replace frog pithing in the study of heart functions. They offer other kits for studying lung functions and blood pressure. Lafayette Instruments and Intellitool have similar kits, including **Physiogrip**, a muscle physiology lab.

Redco Science offers **kits for experiments** in fruit fly genetics, immunology and evolution, mitosis, probability in genetics, and plant and animal cell structure.

The CellServ program has four kits which provide human cell culture materials for studying tissue culture and in vitro toxicology.

The American Fund for Alternatives to Animal Research (AFAAR) and the Center for Advanced Training in Cell and Molecular Biology offer a yearly tuition-free, one-week course, **Introduction to Tissue Culture and In Vitro Toxicity Testing**, in Washington, D.C. It is open to high school and college biology teachers, college biology, pre-med or science students, and high school seniors.



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Project sheets of specific alternatives to common animal-related biology experiments and dissections are available from the National Association for the Advancement of Humane Education (NAAHE).

The Endangered Species Handbook by Greta Nilsson contains numerous non-harmful projects such as animal observation. The handbook is free if the request is on school or library letterhead; otherwise the cost is $10.00. Animal Welfare Institute, P.O. Box 3650, Washington, D.C. 20007.

Students also can learn effectively from activities, such as making a 3-D model or drawing to scale a heart or a particular animal. Examples of this hands-on type of learning are available in a monograph, **Animals in Biology Classrooms**, from the National Association of Biology Teachers (NABT).

BOOKS, PAMPHLETS

REFERENCE BOOKS

Pictorial Anatomy of the Frog, Cat, Dogfish, Fetal Pig, Necturus, Human Embryo-series by Gilbert. University of Washington Press.

Denoyer-Geppert publishes a **Biology Resource Manual** and a **Human Anatomy Resource Manual** with copy masters of black and white anatomical drawings and tests, in Spanish and English editions.

Gray's Anatomy from Running Press is especially good for introductory biology students.

The PKN Series from Wm. C. Brown is a pictured key series for easily identifying insects, spiders, fishes, amphibians, reptiles and others.

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The Johns Hopkins Atlas of Human Functional Anatomy, 3rd edition. Detailed color illustrations, accompanying text and an extensive glossary of terms emphasize functional living anatomy. Johns Hopkins University Press.

The Frog Book by Mary C. Dickerson is a classical non-technical biology study of frogs and toads. Dover.

LABORATORY MANUALS

Modern Biology 1993, Laboratories. (ISBN #H94335-3) a lab workbook, addresses the issue of dissection and alternatives, and includes only one (optional) dissection procedure. Available in pupil and teacher editions. Holt, Rinehart and Winston.

W.H. Freeman publishes **Laboratory Separates**, a series on the anatomy and dissection of a rat, fetal pig, cat and others; and **Atlas and Dissection Guide for Comparative Anatomy** by Wischnitzer. Although we are opposed to dissection, these reprints from lab manuals may serve as a dissection alternative.

ADVANCED COLORING BOOKS

Adult-oriented coloring books can provide a hands-on alternative to dissection.

Gray's Anatomy Coloring Book by Stark and Driggs. Running Press.

Science Coloring Books from Harper Collins include:

The Anatomy Coloring Book
The Physiology Coloring Book
The Biology Coloring Book
The Human Brain Coloring Book
The Human Evolution Coloring Book
The Marine Biology Coloring Book
The Zoology Coloring Book
The Botany Coloring Book

The A & P Coloring Workbook: A Complete Study Guide, supplements any human anatomy and physiology text through exercises, artwork and visualization. Benjamin/Cummings.

The Human Anatomy Coloring Book from Dover.

COMPANIES THAT PROVIDE ALTERNATIVES

Anatomical Chart Company
8221 Kimball Ave.
Skokie, IL 60076
(800) 621-7500

Benjamin/Cummings Publishing Company
390 Bridge Parkway
Redwood City, CA 94065
(800) 950-BOOK

Wm. C. Brown Publishers
2460 Kerper Blvd.
Dubuque, IA 52001
(800) 331-2111

Cambridge Development Laboratory
86 West Street
Waltham, MA 02154
(800) 637-0047

CellServ Program
McCort-Ward Building, Rm #103
The Catholic University of America
Washington, D.C. 20064
(202) 319-5725

The Center for Advanced Training in Cell and Molecular Biology
Department of Biology
The Catholic University of America
Washington, D.C. 20064
(202) 319-6161

Denoyer-Geppert Science Company
5225 Ravenswood Ave.
Chicago, IL 60640-2028
(800) 621-1014
Ask for general catalog or Sharing the Knowledge: Human Anatomy and Physiology Resource Catalog.

Dover Publications, Inc.
31 East Second Street
Mineola, NY 11501
(516) 294-7000

FilmComm
641 North Avenue
Glendale Heights, IL 60139
(708) 790-3300

Films for the Humanities and Sciences
P.O. Box 2053
Princeton, NJ 08543
(800) 257-5126

Focus Media
485 S. Broadway, Ste. 12
Hicksville, NY 11801
(800) 645-8989

W.H. Freeman and Company
Customer Service
4419 West 1980 South
Salt Lake City, UT 84104
(800) 877-5351

Harper Collins Publishers
P.O. Box 588
Dunmore, PA 18512
(800) 331-3761

Holt, Rinehart and Winston
6277 Sea Harbor Drive
Orlando, FL 32887
(800) 225-5425

Intellitool
P.O. Box 459
Batavia, IL 60510-0459
(800) 227-3805

Johns Hopkins University Press
Hampden Station
Baltimore, MD 21211
(800) 537-5487

Lafayette Instrument Company
P.O. Box 5729
Lafayette, IN 47903-5729
(800) 428-7545 or (317) 423-1505

Medical Plastics Laboratory
P.O. Box 38
Gatesville, TX 76528
(800) 433-5539
(800) 722-8525 in TX
(800) 633-2262 in Canada

National Association for the Advancement of Humane Education (NAAHE)
67 Essex Turnpike
East Haddam, CT 06423-1736
(203) 434-8666

National Association of Biology Teachers
11250 Roger Bacon Drive, #19
Reston, VA 22090
(703) 471-1134

National Teaching Aids
1845 Highland Ave.
New Hyde Park, NY 11040
(516) 326-2555

Nystrom
3333 N. Elston Ave.
Chicago, IL 60618-5898
(800) 621-8086

Optical Data Corporation
30 Technology Drive
Warren, NJ 07059
(800) 524-2481

Phipps & Bird
P.O. Box 27324
Richmond, VA 23261
(800) 955-7621

Queue
338 Commerce Drive
Fairfield, CT 06430
(800) 232-2224 or (203) 335-0906
in CT and Canada

Redco Science, Division of Hubbard Scientific
1120 Halbleib Road
Chippewa Falls, WI 54729
(800) 547-3326

Running Press
125 South 22nd Street
Philadelphia, PA 19103
(800) 345-5359

Scholastic Inc.
2931 East McCarty Street
Jefferson City, MO 65101
(800) 541-5513

Sheffield BioScience Programs
Attn: Dr. D.G. Dewhurst
11 Robinson Drive
Harrogate HG2 9DJ
United Kingdom

Teaching Films
1560 Sherman Avenue
Evanston, IL 60201
(800) 323-9084, In Illinois Call
Collect (708) 328-6700

University of Washington Press
P.O. Box 50096
Seattle, WA 98145
(800) 441-4115

Ventura Educational Systems
910 Romona Ave., Ste. E
Grover Beach, CA 93433
(800) 336-1022

Videodiscovery
1700 Westlake Ave., North, Ste. 600
Seattle, WA 98109-3012

OTHER STEPS TO TAKE

Now that you're aware of your right to refuse participation in dissection and know of viable, humane alternatives, you may wish to pursue animal advocacy to a greater degree. Listed are some suggestions:

❒ JOIN NAVS

As a student member of the National Anti-Vivisection Society, you will be kept abreast on issues related to animals in research, education and product testing. Your membership includes a year's subscription to the NAVS *Bulletin* and access to our library of resources.

❒ BECOME A CRUELTY-FREE CONSUMER

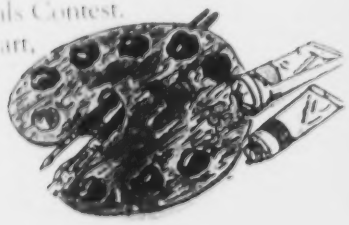
Purchase only those cosmetics and personal care products which are not tested on animals. NAVS regularly produces a guide, *Personal Care For People Who Care*, to the animal testing policies of major manufacturers and distributors of personal care products. The 1994 edition contains the names and addresses for over 600 cruelty-free product makers. A copy of *Personal Care* is included with each NAVS membership.

❒ ACTIVELY PURSUE HUMANE SCIENCE

Look to science fairs and other extracurricular endeavors to demonstrate scientific progress achieved without the use of animals. Reference science fair guidelines and encourage your school to adopt rules which prohibit any invasive animal experimentation.

❒ ILLUSTRATE YOUR COMPASSION FOR ANIMALS

Enter the annual NAVS Art for Animals Contest. Submit original paintings, poetry, line art, sculpture, music or video forms which best express your feelings for animal welfare and against vivisection. Call NAVS for details (1-800-888-NAVS).



WHAT OTHERS HAVE SAID

You are not alone in your feelings of compassion towards animals. Throughout history, prominent spokespeople from all walks of life have voiced their support of our animal companions and opposition to animal experimentation.

"Until he extends the circle of compassion to all living creatures, man himself will not find peace."

Albert Schweitzer

"There are hundreds of paths to scientific knowledge. The cruel ones can teach us only what we ought not to know."

George Bernard Shaw

"Kindness is the only service that will stand the storm of life and not wash out. It will wear well, look well and be remembered long after the prism of politeness or the complexion of courtesy has faded away."

Abraham Lincoln

"Our task must be to free ourselves...by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty."

Albert Einstein

"It's a matter of taking the side of the weak against the strong, something the best people have always done."

Harriet Beecher Stowe

"We cannot have peace among men whose hearts find delight in killing any living creature."

Rachel Carson

"The greatness of a nation and its moral progress can be judged by the way its animals are treated."

Mahatma Gandhi

THE NAVS DISSECTION HOTLINE

1-800-922-FROG
(3764)

NAVS
CREDIBLE ANSWERS
FOR A CRUELTY-FREE WORLD

The National Anti-Vivisection Society
53 West Jackson Blvd., Suite 1552, Chicago, IL 60604

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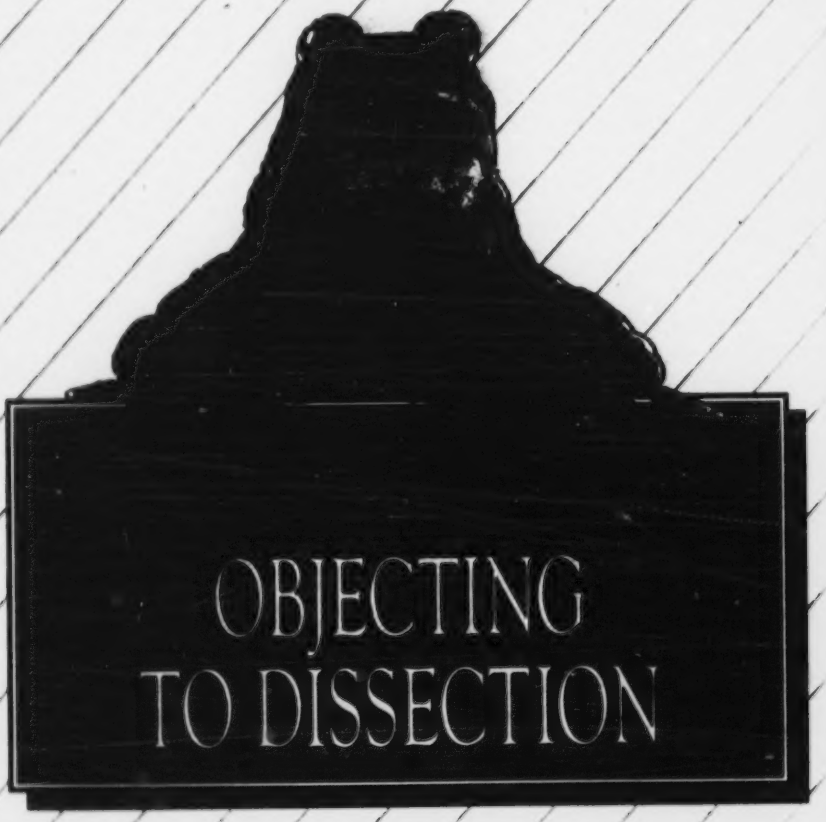
Designed and illustrated by Linda Pendleton



OBJECTING TO DISSECTION

A COLLEGE STUDENT'S HANDBOOK

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Dear Student:

Your decision to refuse participation in dissection exercises represents a courageous stand in defense of animals unable to defend themselves. You have the right to have your ethical beliefs respected by your professor and fellow students without being penalized. Although your objection to dissection may be an unpopular decision, rest assured that you are not alone in your convictions. The NAVS Dissection Hotline fields hundreds of calls every week from like-minded students.

The National Anti-Vivisection Society was founded by an idealistic group on people outraged by the infliction of suffering of animals in the pursuit of science. Today we are bolstered by support from those who know there are better and more humane ways of advancing human health and scientific knowledge. We are committed to the advancement of science education which imparts respect for life as well as an understanding of biology. We assert that dissection imparts a contradictory message–one which compromises an individual's empathy to the suffering of others.

We hope that this booklet provides you with the information you need to support your compassionate decision. Please call us if you have any questions or need additional assistance. Encourage your parents and instructors to call us, too, for current information on innovations in science education which do not inflict suffering on animals.

Sincerely,

Mary Margaret Cunniff

Peggy Cunniff
NAVS Executive Director

Dear Concerned Student:

By contacting the NAVS Dissection Hotline, you've already taken the first step toward protesting animal dissection in college courses. This booklet is designed to help you take the first step down the path to an ethical scientific education.

Refusing to dissect animals can be a difficult choice. I know from experience. In 1987 my daughter, Jenifer, decided she didn't want to dissect a frog in her high school biology class. Jenifer's simple ethical objection spiraled into a two-year struggle to establish her right not to harm animals in the classroom.

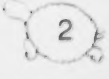
In a number of states students in grades kindergarten through high school have now won the right to refuse to dissect, harm or kill animals–and the right to substitute an alternative project. Other states (California, Florida, New York, and Pennsylvania) have policies that guarantee a student's right to refuse dissection. I believe that college students also deserve to have their rights respected.

We designed this handbook to assist students in taking a stand on their beliefs about humane education and respect for the environment. If after reading this booklet you have more questions about how to proceed, feel free to call me at our toll-free number, 1-800-922-FROG (3764).

Sincerely,

Pat Davis

Pat Davis
Director, NAVS Dissection Hotline



TO DISSECT... OR OBJECT?

A question of conscience.

When dissection was introduced into the educational curriculum in the 1920s, it was thought to be a good learning tool in the study of anatomy, physiology and the theory of evolution. Today, more sophisticated teaching methods have been developed which can replace dissection and save animals.

But dissection is a big business. Every year millions of animals are killed to be dissected for educational experiments. Many of these animals, such as frogs, earthworms, crayfish and perch, are collected from their natural environments; in the process, their habitats are decimated and entire ecologies are threatened. Many other animals, such as rats, are bred merely to suffer and then die. A recent investigation of certain biological supply houses showed that cats obtained for dissection suffered very painful and cruel deaths.

Equally destructive is the desensitizing effect of mutilating and dismembering animals in the name of science and for the cause of "education." Somehow the study of "life science" - meant to instill wonderment and respect for life-has become the science of death. Dissection teaches students that animal life is expendable and unimportant. As a result, some of the best potential scientists, who have a deep respect for animal life, may end up dropping out of a field they love because they refuse to take part in senseless killing.

Despite the availability of numerous innovative educational alternatives ranging from detailed models to computer simulations, animal dissection remains a fixture in most college biology, physiology and zoology courses. Year after year, millions of animals needlessly die in U.S. college classes to demonstrate basic anatomy, which could easily be taught by other means.

Recently, students around the country have begun to speak out against this misguided practice. As student objections to dissection become more vocal and visible, the use of humane, innovative teaching methods increases. In fact, many medical and veterinary schools have eliminated, or no longer require animal labs.

Every time a student exercises his or her right not to dissect animals, the awareness of the entire academic community is increased. By exercising your right as a student, you can help create an environment where respect for animals is considered the norm.

SAYING NO TO DISSECTION

Guidelines to consider when raising your objection to your professor.

1. VOICE OBJECTIONS EARLY

First, clarify your reasons for requesting an alternative, and decide how far you are willing to take matters. Before the term starts, or as soon as possible thereafter, ask your professor whether you will be expected to dissect or use live animals. Find out precisely what you will be asked to do. Don't rely on your professor to give you advance warning.

Tell your professor of your intention not to participate in dissection experiments as soon as possible; do not wait until the day of the dissection lab to voice your objection. This will give both you and your professor enough time to work out an acceptable alternative.

2. BE FIRM, BE CALM

State your objections calmly and clearly, and be prepared to discuss your reasons for refusing to dissect. Never approach your professor in an arrogant, self-righteous or confrontational manner. Presume that he or she may have a different belief system on the issue of animal use, and it is unlikely that you will change those views. On the other hand, stress that you do not wish this value system to be imposed upon you, as it conflicts with your ethical or spiritual beliefs.

3. SUGGEST ALTERNATIVES

Suggest reasonable alternatives that will meet the teaching goals of the course by some method that doesn't involve the harmful use of animals. This could include writing a paper, preparing anatomical charts or studying diagrams, videos or models. The alternative project should take an equivalent amount of time and effort and be relevant to the course work. Be prepared to be tested on the same materials as other students, as long as the test itself does not include a practical dissection, or the use of dissected specimens. ***You should not be penalized for doing an alternative project.***

4. ASK FOR A STRAIGHT ANSWER

Ask your professor to respond promptly to your request for an alternative project so you'll have enough time to complete it. If you get a noncommittal or negative response, take your request to the appropriate department head or dean.

5. GET LEGAL ADVICE

The NAVS Dissection Hotline has had great success in negotiating with educational institutions on this issue. If you want legal advice or need to take legal action to defend your right to object to dissection, the NAVS Dissection Hotline can put you in touch with an attorney.

6. PASS A POLICY

Another approach is to organize like-minded students and go to your professor and department head as a group. Request that a formal policy be instituted which offers alternatives for students. Put your request, and the suggested policy in writing, and ask for a reply by a specific date. Get letters of support from students who have avoided science classes because of dissection requirements. You can also use the campus newspaper and radio station as a forum for discussion. Go to the Dean and Board of Trustees if necessary. Be polite but persistent. Tenacity is the key to success.

PUTTING IT INTO WORDS

Communicating your thoughts and feelings about animals and dissection.

Some students who refuse to dissect encounter resistance–and even hostility–from professors, department heads and deans. When your ethical beliefs are challenged, it's important to be prepared. Here are some arguments that you might come up against if you object to taking part in dissection, along with some possible responses.

HANDS-ON EXPERIENCE IS ESSENTIAL TO UNDERSTANDING BIOLOGY.

There are many practical alternatives to dissection. I can get "hands-on" experience by using detailed models of animal anatomy, observing live animals, or dissecting plants. Also, some people learn more from clear, detailed diagrams or computer simulations than from animal specimens.

DISSECTION IS A COURSE REQUIREMENT, AND YOU HAVE TO DO WHAT'S REQUIRED TO PASS THE COURSE.

I'm willing to be tested on my knowledge acquired by means other than dissection. I'm willing to do as much work as anyone else–by studying books, computer programs, videos or models–to meet the standards of the course.

THE PROFESSOR'S ACADEMIC FREEDOM IS AT STAKE.

My freedom of belief is what really is at stake. All the professor is being asked to do is consent to an alternative procedure for me because I am morally opposed to dissection. Students who are willing to dissect can still do so.

YOU ARE BEING SQUEAMISH. YOU SHOULD FACE YOUR FEARS AND MAKE YOURSELF DO THE DISSECTION ANYWAY.

Refusing to dissect has nothing to do with being afraid. Being opposed to dissection is not a sign of emotional immaturity, but of compassion for animals.

YOU ARE NOT A VEGETARIAN (OR YOU WEAR LEATHER SHOES), SO THEREFORE YOU ARE NOT ENTITLED TO OBJECT TO DISSECTION.

I have the right to draw the line where my conscience dictates, and to have my beliefs respected. Some people believe that it is necessary to use animals for food (or clothing) while at the same time believing it is unnecessary to kill them for dissection. Others who eat meat believe it is wrong to eat dogs and cats, or to hunt. Everyone draws the line somewhere, and because of my moral beliefs, I draw the line at dissection.

YOU DON'T HAVE TO DISSECT, JUST WATCH.

I can't watch someone else doing something that I think is wrong. Watching is still taking part in the dissection, and I am unwilling to do that. I would like to be excused from the lab while the dissection is taking place.

DISSECTION TEACHES US TO UNDERSTAND LIFE.

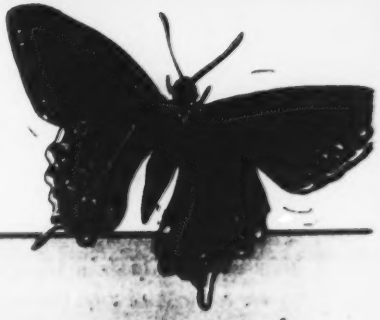
Biology is supposed to teach us respect for life, but dissection teaches us that animal life is cheap and expendable.

YOU DON'T HAVE TO KILL THE ANIMAL, IT'S ALREADY DEAD.

Using an animal that was captured, bred or killed for dissection still contributes to the cruelty involved. Even if the animal was killed for other reasons (such as a dog or cat that was euthanized at an animal shelter), using the animal for educational purposes is supporting the notion that animals are merely "tools." Recently, biological supply companies have come under scrutiny for cruel and inhumane treatment of animals "processed" for dissection. Cats which were pets have been stolen and sold for profit, both in the U.S. and in Mexico. There is no way to determine if the animal you are asked to dissect was treated in a humane manner.

PUTTING IT IN WRITING

When you refuse to dissect, it may be necessary to send letters to your professor, department head and, if necessary, the dean in order to formally explain your beliefs.



Here are some suggestions for writing these letters:

- Keep them short and to the point.
- Do not be defensive or argumentative.
- Stick to the issue, i.e. your right to have your beliefs respected, and your willingness to perform an alternative project.
- Be sure to include a statement as to why you feel dissection violates your ethical or spiritual beliefs.
- Provide your professor or department head with suggested alternatives, if you can.
- Ask them to promptly reply to your request to do an alternative project.
- State your willingness to commit an equivalent amount of time and energy.
- Always keep copies of your letters for your own file, as these will be important if you ultimately take legal action. You should always keep a diary or written summary of your actions; include dates, times and subjects of conversations, as well as people involved.

BEST COPY AVAILABLE

COLLEGE STUDENTS SPEAK OUT AGAINST DISSECTION

Experiences of students who stood up for their beliefs.

In our Animal Health Technology department, students in anatomy and physiology classes were required not only to dissect rats, but to kill them by putting them in a box and electrocuting them. Who gave us the right to take those rats and kill them like that? It is wasteful and redundant.

Over the past year and a half, I've been telling the professors in the department that there's a better way. They stopped the process of having students kill the rats, and hired someone to kill the rats for the school. Yet students are still required to dissect rats in five labs per semester.

Finally, I got the courage to say that morally, ethically and spiritually, this practice offends me and I'm unable to do it. The professor wouldn't allow me to do extra or alternative projects, and told me I'd still have to take the test after the class. But I studied on my own, through books and diagrams, and got an "A".

Other people in the class who were afraid of saying "no" saw that I got good grades and wasn't harassed much. Maybe next time, they'll choose to do it, too. It helps when you are not alone. Next year the campus animal rights group will have the Dissection Hotline number at registration so people can call before the lab comes up, before they have to make a decision.

Clarissa L., Riverside, CA

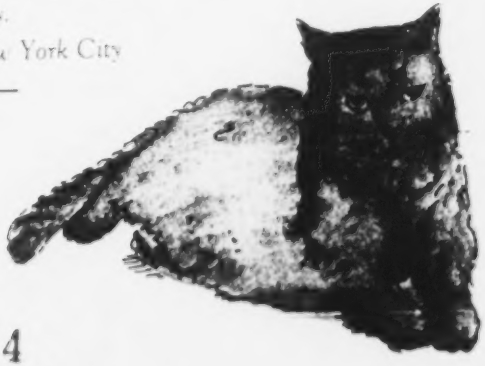
I was taking a pre-med biology course, and I had no idea that dissection was required. I went to the professor, and then to the head of the department, to see if I could do an alternative project because I don't believe in dissection. Initially, I got some threats that I would have to withdraw from the course. The lab teacher tried to convince me that dissection is not only beneficial, but it's "really fun". They were dissecting earthworms, crayfish, sharks,

frogs, and rats. Needless to say, I wasn't convinced. The professors were stubborn, but I didn't approach them with an attitude that they're wrong, and I'm right, because that would have antagonized them. I let them know that it's okay for them to have their beliefs, but I have my belief and I have a right to follow my conscience. Eventually, we sat down and talked about an alternative. When they really understood that I was serious, they put all their efforts toward helping me. They gave me films, models and histology slides (prepared slides that are used over and over), and pictures. They even said they were going to have to make up a detailed course for other students who objected to dissection. Two other students joined me when they realized they had alternatives. A lot of students think that if you don't do dissection, you can't get into medical school. But when you start making compromises, that's the end of your personal integrity.

Jay K., New York City

I'm planning to object to dissection, and I'm gathering information about it before I face the situation in class. The objection I have is that it seems like a terrible waste for every student in the class to dissect a frog, when one frog or one model could teach everyone the same information. Whether you take apart a frog or see it in a diagram makes no difference—you're going to learn what a frog's kidney looks like either way. Why waste a life? I don't think that I should forsake my personal rights for a class requirement. Everyone has their personal limits with regard to animals and the school should respect those. As long as there are good alternatives, people should be respected for their problems with dissection—whether moral, ethical, or just physical aversion to it.

Heather W., Conway, AK



ALTERNATIVES TO ANIMAL DISSECTION

There are many alternatives to animal dissection for teaching biology, anatomy, physiology or zoology.

The following teaching materials are samples of what you can suggest to your professor, department head or dean. We have selected only those materials that do not require animals to be harmed or killed.

While some of these alternative materials may appear expensive, they can be used for many years, by many students. In comparison, animals are expensive and can only be used once, and usually by only one to three students.

Each description lists the name of the company or other source where innovative educational materials can be obtained. Addresses and telephone numbers are listed at the end of this booklet under "Companies That Provide Alternatives." None of these providers sell animals for dissection. We recommend ordering catalogs from these companies, as they may offer more detailed alternatives. If you have a specific question or need that is not addressed here, please contact the NAVS Dissection Hotline toll-free at 1-800-922-FROG (3764).

ANATOMICAL MODELS

The National Anti-Vivisection Society has a **lifelike bullfrog model** available on a free loan basis. Call 1-800-888-NAVS (6287).

Three-dimensional vinyl zoological models of a frog, earthworm, grasshopper and perch are available from Nystrom.

Denoyer-Geppert makes the **Great American Bullfrog** with a dissectible heart.

National Teaching Aids offers **vinyl relief models** of a frog and earthworm, with removable, flexible organs and carrying case.

Human anatomy torso models with removable parts are available from Denoyer-Geppert, Nystrom, National Teaching Aids, Anatomical Chart Company and Medical Plastics Laboratory.

Models of individual organs and systems are available from Nystrom, Denoyer-Geppert , Anatomical Chart Company and Medical Plastics.

Redco Science makes individual **desktop plastic Drisect models** of nine body organs and systems, and two **Drisect comparative anatomy kits** of vertebrate hearts and brains.

Armstrong Medical and Medical Plastics have many **models and manikins** for use in nursing, medical and emergency medical studies.

Denoyer-Geppert, Anatomical Chart Company and Medical Plastics have a wide selection of **plastic skeletons and skulls**.

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VIDEOTAPES, VIDEODISCS AND SLIDES

A video, **Advances in Humane Education: Alternatives in Biology** from the National Anti-Vivisection Society (NAVS) gives an overview of many new methods that replace animal dissection. It is available on a free-loan basis, or for purchase from FilmComm.

Videotapes on human anatomy are available from Teaching Films, Films for the Humanities and Sciences, and Denoyer-Geppert (to accompany their Know Body torso model). Focus Media offers a 3-part "Your Body" series, and videos on mitosis and meiosis, DNA, evolution and natural selection.

A 3-D imaging videodisc on human anatomy, "Atoms to Anatomy," and a videodisc, "Cell Biology," are available from Videodiscovery.

Optical Data Corporation has a **laserdisc, Principles of Biology**, in its Living Textbook Series.

Videos on plant, animal and marine biology are available from Films for the Humanities and Sciences.

Excellent videotapes and color slides of human cadaver dissections are available from the audiovisual section of any medical school library, or from most major publishers. CellServ has a video which explains the **use of tissue culture** in biomedical research (and guides for CellServ kits).

CHARTS AND TRANSPARENCIES

Denoyer-Geppert publishes large, **full-color series of charts** on human physiology, human anatomy and a survey of human biology. Also available from Denoyer-Geppert are charts of individual systems or anatomical parts.

Nystrom sells the Frohse series of **anatomical charts** and the Jurica **zoology chart series.**

Anatomical Chart Company has many **charts of human anatomy and physiology**, as well as medical, nursing and chiropractic charts.

Biology overhead transparency atlases available from Denoyer-Geppert include: human organs and systems; apparatus of movement; histology; parasitology, reproduction and germ development in humans and animals; and a three-part series on the origin and evolution of life.

COMPUTER PROGRAMS

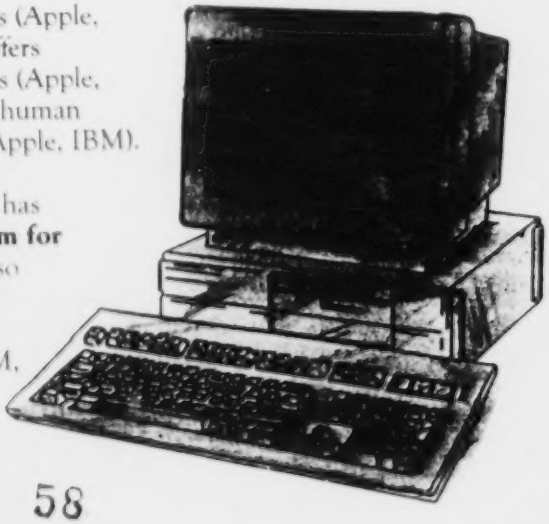
Queue and Cambridge Development Lab have a large variety of programs in basic and advanced biology, anatomy and physiology, zoology, biochemistry, genetics and population dynamics (Apple, IBM, Mac). EME offers programs on meiosis (Apple, IBM, Mac) and the human circulatory system (Apple, IBM).

A.D.A.M. Software has developed a **program for human dissection** so that students can "dissect" without a cadaver (Apple, IBM, Mac).

The Rat Stack is an interactive "atlas" which uses photo images and diagrams to show different layers/stages of a rat dissection (Mac). Sheffield BioScience Programs.

Visifrog, a program in frog anatomy with a database and quizzes suitable for remedial or high school competency courses, is available from Ventura (Apple, IBM, Mac).
They also have a series on marine life anatomy for the same level (Apple, IBM, Mac).

Psychologists for the Ethical Treatment of Animals (PsyETA) has a list of **alternative software for psychology courses** (see address on page 18).



NON-ANIMAL PROJECTS

Several companies offer computer-based labs, utilizing students as subjects. Queue and Cambridge Development Lab offer the **Bio-feedback MicroLab** with several sensors to measure various body functions; and **The Body Electric** for examining brain waves (EEG), electrocardiograms (EKG) and muscle electrical activity (EMG) (both Apple). Queue also has a **Cardiovascular Fitness Lab** (Apple, IBM) and an **Experiments in Human Physiology** program (Apple).

Phipps & Bird manufactures the **BioMonitor (Harvard Biometer)**, a simplified EKG to replace frog pithing in the study of heart functions; they offer other kits for studying lung functions and blood pressure. Lafayette Instruments and Intellitool have similar kits, including **Physiogrip**, a muscle physiology lab.

Redco Science offers **kits for experiments** in fruit fly genetics, immunology and evolution, mitosis, probability in genetics, and plant and animal cell structure.

The CellServ program has four kits which provide human cell culture materials for studying tissue culture and in vitro toxicology.

The American Fund for Alternatives to Animal Research (AFAAR) and the Center for Advanced Training in Cell and Molecular Biology offer a yearly tuition-free, one-week course, **Introduction to Tissue Culture and In Vitro Toxicity Testing**, in Washington, D.C. It is open to high school and college biology teachers, college biology, pre-med or science students, and high school seniors.

Students can also learn effectively from activities, such as making a 3-D model or drawing to scale a heart or a particular animal. Examples of this hands-on type of learning are available in a monograph, **Animals in Biology Classrooms**, from the National Association of Biology Teachers (NABT).

BOOKS, PAMPHLETS

REFERENCE BOOKS

Pictorial Anatomy of the Frog, Cat, Dogfish, Fetal Pig, Necturus, Human Embryo-series by Gilbert. University of Washington Press.

Human Anatomy, 2nd Edition: A Text and Colour Atlas by Gosling. J.B. Lippincott.

Gray's Anatomy from Running Press is especially good for introductory biology students.

The Johns Hopkins Atlas of Human Functional Anatomy, 3rd edition. Detailed color illustrations, accompanying text and an extensive glossary of terms emphasize functional living anatomy. Johns Hopkins University Press.

Color Atlas of Anatomy: A Photographic Study of the Human Body, 2nd Edition, by Rohen and Yokochi. Color photos of human dissections provide a 3-dimensional quality. Denoyer-Geppert.

LABORATORY MANUALS

Laboratory Anatomy of the Human Body, 4th Edition, by Butterworth. Wm. C. Brown.

W.H. Freeman publishes **Laboratory Separates**, a series on the anatomy and dissection of a rat, fetal pig, cat and others; and **Atlas and Dissection Guide for Comparative Anatomy** by Wischnitzer. Although we are opposed to dissection, these reprints from lab manuals may serve as a dissection alternative.

Wm. C. Brown Co. offers customized publishing services so a book can be compiled which eliminates depictions of dissection, and uses only desired exercises.

ADVANCED COLORING BOOKS

Adult-oriented coloring books can provide a hands-on alternative to dissection.

Gray's Anatomy Coloring Book by Stark and Driggs. Running Press.

Science Coloring Books from Harper Collins include:

The Anatomy Coloring Book
The Physiology Coloring Book
The Biology Coloring Book
The Human Brain Coloring Book
The Human Evolution Coloring Book
The Marine Biology Coloring Book
The Zoology Coloring Book
The Botany Coloring Book

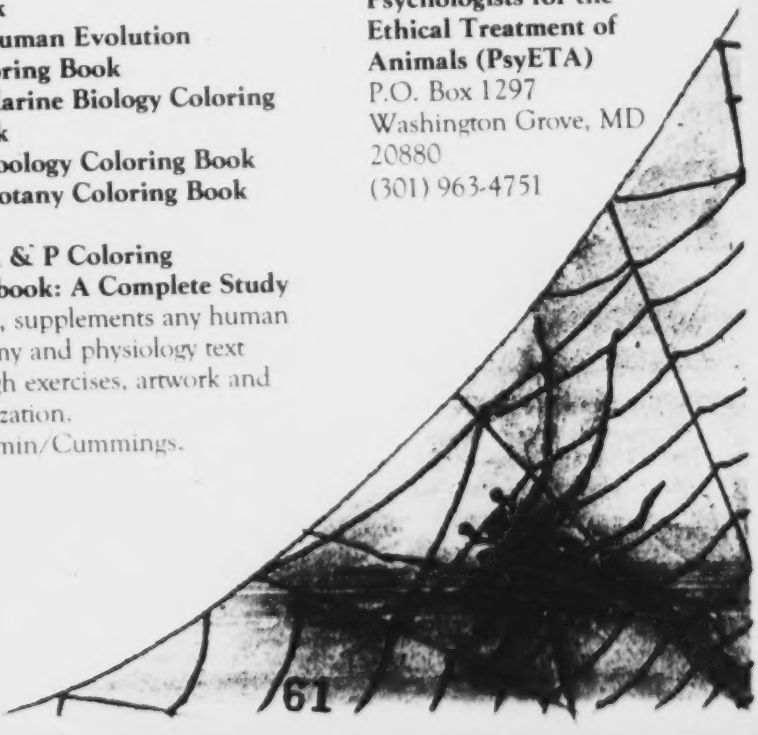
The A & P Coloring Workbook: A Complete Study Guide, supplements any human anatomy and physiology text through exercises, artwork and visualization. Benjamin/Cummings.

RESOURCES FOR MEDICAL, VETERINARY AND PSYCHOLOGY STUDENTS:

Physicians Committee for Responsible Medicine (PCRM)
P.O. Box 6322
Washington, D.C. 20015
(202) 686-2210

Association of Veterinarians for Animal Rights (AVAR)
P.O. Box 6269
Vacaville, CA 95696
(707) 451-1391

Psychologists for the Ethical Treatment of Animals (PsyETA)
P.O. Box 1297
Washington Grove, MD 20880
(301) 963-4751



COMPANIES THAT PROVIDE ALTERNATIVES

A.D.A.M. Software
1600 Riveredge Parkway, Ste. 800
Atlanta, GA 30328
(800) 755-ADAM

Anatomical Chart Company
8221 Kimball Ave.
Skokie, IL 60076
(800) 621-7500

Armstrong Medical Industries
P.O. Box 700
Lincolnshire, IL 60069-0700
(800) 323-4220

Benjamin/Cummings Publishing Company
390 Bridge Parkway
Redwood City, CA 94065
(800) 950-BOOK

Wm. C. Brown Publishers
2460 Kerper Blvd.
Dubuque, IA 52001
(800) 331-2111

Cambridge Development Laboratory
86 West Street
Waltham, MA 02154
(800) 637-0047

CellServ Program
McCort-Ward Building, Rm. #103
The Catholic University of America
Washington, D.C. 20064
(202) 319-5725

The Center for Advanced Training in Cell and Molecular Biology
Department of Biology
The Catholic University of America
Washington, D.C. 20064
(202) 319-6161

Denoyer-Geppert Science Company
5225 Ravenswood Ave.
Chicago, IL 60640-2028
(800) 621-1014
Ask for general catalog or Sharing the Knowledge: Human Anatomy and Physiology Resource Catalog.

EME Corporation
P.O. Box 2805
Danbury, CT 06813-2805
(800) 848-2050, (203) 798-2050.

FilmComm
641 North Avenue
Glendale Heights, IL 60139
(708) 790-3300

Films for the Humanities and Sciences
P.O. Box 2053
Princeton, NJ 08543
(800) 257-5126

W.H. Freeman and Company
Customer Service
4419 West 1980 South
Salt Lake City, UT 84104
(800) 877-5351

Harper Collins Publishers
P.O. Box 588
Dunmore, PA 18512
(800) 331-3761

Intellitool
P.O. Box 459
Batavia, IL 60510-0459
(800) 227-3805

Lafayette Instrument Company
P.O. Box 5729
Lafayette, IN 47903-5729
(800) 428-7545 or (317) 423-1505

J.B. Lippincott Company
P.O. Box 1580
Hagerstown, MD 21741
(800) 638-3030

Medical Plastics Laboratory
P.O. Box 38
Gatesville, TX 76528
(800) 433-5539
(800) 722-8525 in TX
(800) 633-2262 in Canada

National Association of Biology Teachers
11250 Roger Bacon Drive, #19
Reston, VA 22090
(703) 471-1134

National Teaching Aids
1845 Highland Ave.
New Hyde Park, NY 11040
(516) 326-2555

Nystrom
3333 N. Elston Ave.
Chicago, IL 60618-5898
(800) 621-8086

Optical Data Corporation
30 Technology Drive
Warren, NJ 07059
(800) 524-2481

Phipps & Bird
P.O. Box 27324
Richmond, VA 23261
(800) 955-7621

Queue
338 Commerce Drive
Fairfield, CT 06430
(800) 232-2224 or (203) 335-0906
in CT and Canada

Redco Science, Division of Hubbard Scientific
1120 Halbleib Road
Chippewa Falls, WI 54729
(800) 547-3326

Running Press
125 South 22nd Street
Philadelphia, PA 19103
(800) 345-5359

Sheffield BioScience Programs
Attn: Dr. D.G. Dewhurst
11 Robinson Drive
Harrogate HG2 9DJ
United Kingdom

Teaching Films
1560 Sherman Avenue
Evanston, IL 60201
(800) 323-9084, In Illinois Call Collect (708) 328-6700

University of Washington Press
P.O. Box 50096
Seattle, WA 98145
(800) 441-4115

Ventura Educational Systems
910 Romona Ave., Ste. E
Grover Beach, CA 93433
(800) 336-1022

Videodiscovery
1700 Westlake Ave., N., Ste. 600
Seattle, WA 98109-3012
(800) 548-3472

OTHER STEPS TO TAKE.

Now that you're aware of your right to refuse participation in dissection and know of viable, humane alternatives, you may wish to pursue animal advocacy to a greater degree. Listed are some suggestions:

❒ JOIN NAVS
As a student member of the National Anti-Vivisection Society, you will be kept abreast on issues related to animals in research, education and product testing. Your membership includes a year's subscription to the NAVS *Bulletin* and access to our library of resources.

❒ BECOME A CRUELTY-FREE CONSUMER
Purchase only those cosmetics and personal care products which are not tested on animals. NAVS regularly produces a guide, *Personal Care For People Who Care*, to the animal testing policies of major manufacturers and distributors of personal care products. The 1994 edition contains the names and addresses for over 600 cruelty-free product makers. A copy of *Personal Care* is included with each NAVS membership.

❒ ACTIVELY PURSUE HUMANE SCIENCE
Look to science fairs and other extracurricular endeavors to demonstrate scientific progress achieved without the use of animals. Reference science fair guidelines and encourage your school to adopt rules which prohibit any invasive animal experimentation.

❒ ILLUSTRATE YOUR COMPASSION FOR ANIMALS
Enter the annual NAVS Art for Animals Contest. Submit original paintings, poetry, line art, sculpture, music or video forms which best express your feelings for animal welfare and against vivisection. Call NAVS for details (1-800-888-NAVS).

WHAT OTHERS HAVE SAID

You are not alone in your feelings of compassion towards animals. Throughout history, prominent spokespeople from all walks of life have voiced their support of our animal companions and opposition to animal experimentation.

"Until he extends the circle of compassion to all living creatures, man himself will not find peace."

Albert Schweitzer

"There are hundreds of paths to scientific knowledge. The cruel ones can teach us only what we ought not to know."

George Bernard Shaw

"Kindness is the only service that will stand the storm of life and not wash out. It will wear well, look well and be remembered long after the prism of politeness or the complexion of courtesy has faded away."

Abraham Lincoln

"Our task must be to free ourselves...by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty."

Albert Einstein

"It's a matter of taking the side of the weak against the strong, something the best people have always done."

Harriet Beecher Stowe

"We cannot have peace among men whose hearts find delight in killing any living creature."

Rachel Carson

"The greatness of a nation and its moral progress can be judged by the way its animals are treated."

Mahatma Gandhi

THE NAVS DISSECTION HOTLINE

1-800-922-FROG
(3764)

NAVS
CREDIBLE ANSWERS
FOR A CRUELTY-FREE WORLD

The National Anti-Vivisection Society
53 West Jackson Blvd., Suite 1552, Chicago, IL 60604

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Designed and illustrated by Linda Huffington

A RATIONAL CRITIQUE OF DISSECTION

DISSECTION HOTLINE

1-800-922-3764

National Anti-Vivisection Society
53 W. Jackson
Chicago, IL 60604
1-800-888-NAVS

Dear Science Teacher,

A growing number of students at all grade levels are voicing objections to what they see as the unnecessary use of animals in education. Most often, this is because the student cares about and respects animals, and sees dissection as a violation of that respect. Many teachers allow students the option of performing an alternative to dissection which meets the objective of the lesson, while honoring the ethical beliefs of the student.

Dropping the class, observing the dissection, or being required to take a test using dissected specimens are not acceptable alternatives for most students. Of course, situations will vary; some students may be willing to watch a videotape of a dissection, while others may object to this as well because it involved the killing of an animal.

When a student is forced to do something which violates his or her moral beliefs, or is penalized for refusing to do so, there can be long term negative emotional and psychological effects. We know this from dealing with many adults who never forgot the trauma of being made to dissect in school.

In the interest of providing a positive educational experience for all students, we encourage you to pursue a formal policy at your school which recognizes the option of a humane alternative to dissection.

Consider that students who claim to want to dissect usually do so for "sensational" reasons and should be required to logically justify their request. Also, a note from their parents giving approval might ensure their commitment to the proper role of dissection in class.

Teachers who insist that dissection is absolutely necessary must realize that this is only an opinion which is not shared by all educators.

EFFECTIVENESS OF ALTERNATIVES

Eleven studies (references supplied upon request) support the fact that alternatives to dissection are at least as effective as dissection. In actuality, students who learn from models, detailed charts and computers usually do better on academic tests of their knowledge of biology and basic physiology than do those who participate in dissection. When alternatives are available, there is no good reason to continue to use the death of animals to teach lessons in the life sciences.

OTHER CONSIDERATIONS:

Dissection is big business, from the biological supply companies to the trappers in the wild. The frog, a widely-used biological "specimen," does not breed well in captivity. Frogs and other amphibians are disappearing from the wild at an alarming rate. The balance of nature is therefore disrupted, and insects and insect-borne diseases proliferate in the absence of these natural predators.

WHY DO WE TEACH BIOLOGY?

Teachers have good reasons to teach Biology to their students. Having detailed knowledge about the specific functions of organ systems and their interaction with other systems is integral to all medical and some biomedical scientists. Curiosity about life begins at an early age, and that curiosity should be satisfied whenever possible. Recent studies have shown that curiosity about life is not the same as curiosity about death. Therefore, more innovative biology teachers have sought ways of inculcating a respect for life with their lessons on organ and bodily function.

Teachers also want to help their students respect science and want to be a part of scientific advancement. Many students are permanently turned off to science because of dissection requirements...and not just at the high school level. We have personally worked with many competent and compassionate individuals who have reluctantly given up their dreams of pursuing a career in science simply because they were required to cause pain, suffering, and death to nonhuman animals during the course of their studies.

There are alternatives to turning students off to science. Call the NAVS Dissection Hotline for some suggestions at 1-800-922-3764.

VIOLENCE IS NOT LIMITED TO OUR STREETS

In the last decade, the percentage of children who commit crimes has shot up from 2% to approximately 30%. For example, a 13-year-old San Antonio, Texas, girl was recently convicted of unemotionally killing two younger children by suffocation so that they would stop crying. "What does this have to do with dissection?" you may ask.

Many teachers are asking themselves "Why encourage any form of violence?" Killing animals for educational purposes is clearly a form of violence to the animals. Several studies have demonstrated that dissection is not necessary to science education. The number of innovative teaching methods and alternatives grows steadily. Why give a mixed message? Most teachers want to encourage compassion and respect for life in our young people.

Science teachers must also consider whether or not they are acting responsibly when they place a scalpel in a student's hand, without ever justifying extinguishing the life of the animal. Science cannot be separated from ethics.

If fetal pigs, cats and frogs are treated as expendable commodities—to be unemotionally cut open, examined and disposed of—what message does that impart to the impressionable young mind?

There is a high correlation between violence to nonhuman animals and to humans.

Regardless of how professionally the teacher acts toward the dissection experiment, or how calm and reasoned the introduction, one fact remains clear: The student is expected to cut open and then discard a once-living animal, killed specifically for a redundant classroom exercise. Where is the "respect for life" biology is supposed to teach?

HOW CAN NAVS HELP?

❒ By supplying reference materials outlining alternatives to dissection and their relative efficiency in teaching.

❒ By loaning frog and/or fetal pig models to schools.

❒ By helping students, teachers and parents communicate effectively about dissection.

❒ By providing guest speakers to science and biology teacher meetings or conventions.

❒ By promoting the adoption of formal policies offering alternatives to every student.

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SCIENCE FAIRS & ANIMALS

Experiments in Cruelty

STUDENTS & ANIMAL EXPERIMENTATION: A Case for Reform

Science fairs provide young students with a wonderful opportunity to use their talents, explore their interests and learn. **The National Anti-Vivisection Society** (NAVS) encourages and supports the efforts of students whose projects involve using alternatives to animals in science experiments. NAVS intends to provide even greater support in the future to students participating in science fairs with rules that do not condone the causing of harm to animals.

During the last several years, high school students have won awards at their science fairs for a wide variety of very noteworthy animal-based projects which have not caused pain, suffering or death to animals. For example, students have researched and studied gopher relocation plans, dolphin populations, the reproduction of rabbits, tortoise ecology, the effect of desert flash floods on beavers, the calls of owls, and the social behavior of animals at zoos. We strongly believe that these kinds of non-invasive projects need to be encouraged.

THE REGULATIONS

The rules of the International Science and Engineering Fair (ISEF) specifically allow high school students to do research on vertebrate animals involving physical stress, ionizing radiation, carcinogens, tumors and surgery. Research in nutritional deficiency, ingestion, inoculation or exposure to hazardous or toxic materials or drugs is also permitted to the point where signs or lesions of the deficiency or toxicity appear.

Similarly, the rules of various state junior academies permit projects involving harm to animals.

The rules of the Westinghouse Science Talent Search, considered by many to be the most prestigious of all the science fair competitions, are far more humane and specifically state that:

> "No projects involving live vertebrate animal experimentation will be eligible. However, if a student is working in a laboratory where animal experimentation is taking place, the student's research is eligible for entry...
>
> "(1) if the student has no physical contact with the animals;
>
> "(2) if the material on which the student is working (tissue, blood, etc.) is supplied to the student by the supervising scientist; and
>
> "(3) if the animals involved are sacrificed for a purpose other than the research being done by the student.... Projects involving behavioral observations of animals in their natural habitat are...eligible."

Westinghouse changed its rules to prohibit live vertebrate animal experimentation after the public expressed its outrage over a project entered in the 1969 competition that involved the blinding and starving of sparrows.

Eight states have also enacted laws to prohibit or restrict high school students from performing harmful projects on vertebrate animals.

RECENT CHANGES

The National Anti-Vivisection Society has brought to the attention of many of the ISEF sponsors and to Science Service Inc., the administrator of ISEF (and ironically, the administrator of the Westinghouse competition, as well), information about the ISEF projects that have been performed during the last few years which involved pain, suffering and death to vertebrate animals. In response, Eastman Kodak Company has adopted its own set of humane criteria that it will use when judging science fair projects.

Likewise, Phillips Petroleum Company has endorsed the Kodak standards. Other ISEF sponsors are considering NAVS' requests for them to use the Westinghouse rules or Kodak criteria when judging science fair projects and to ask Science Service Inc. to adopt the Westinghouse rules or Kodak standards for ISEF.

Thus far, Science Service has refused to change the ISEF regulations and to meet with NAVS about this issue.

WHAT YOU CAN DO TO HELP

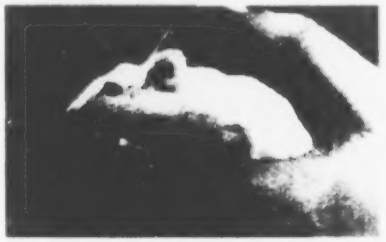
Recent changes in criteria from sponsoring organizations like Eastman Kodak and Phillips Petroleum demonstrate that changes can be made in science fair governing rules without jeopardizing the goal of promoting interest and enthusiasm in the sciences in schools across the country. By encouraging the administrator of two of the biggest science fairs in the country to adopt humane rules for participants to follow in selecting their projects, you can promote both the welfare of animals and the progress of innovative science.

You can make a difference!

- Contact Alfred McLaren, President of Science Service Inc., at 1719 N Street, N.W., Washington, D.C. 20036, (202) 785-2255, and ask that the ISEF rules be changed. Ask that ISEF adopt the Westinghouse rules or the Eastman Kodak criteria or develop its own humane project criteria.

- When advising students about their science fair projects, encourage them to do projects that will not cause pain, suffering or death to animals.

For more information about this issue, including copies of the science fair rules referred to above, and the Eastman Kodak criteria, please contact the National Anti-Vivisection Society at 53 West Jackson Boulevard, Chicago, Illinois 60604, (800) 888-6287.



SANCTIONED ANIMAL CRUELTY

The Lessons Some Students Learn

While the vast majority of science fair projects do not involve harm to animals, projects that cause pain, suffering and death to animals continue to be performed by some high school students in full compliance with science fair rules.

In these violent times should science fairs be promoting lessons of insensitivity to non-human animal life? Aren't there more important lessons to be learned?

Below is a sampling of some of the winning projects that high school students performed during the last few years for the International Science and Engineering Fair:

- ❒ Rams' accessory sex glands: electrically shocked
- ❒ Mice study on exercise and glucose levels: mice placed on exercise wheel attached to record player
- ❒ Rabbits and steroids: developed kidney, liver, skin, behavioral problems and inflammation of muscles
- ❒ Rats tested for ingestion of milk: rubber bands tied around their tails
- ❒ Mice cancer study: injected with cancerous cells
- ❒ Rats and steroids: bled to death
- ❒ Gerbil study: given NoDoz and Kool-Aid
- ❒ Fish behavior: exposed to high decibel levels of sound
- ❒ Chicks and mice study: injected with aspartame
- ❒ Rat study: exposed to repeated cold conditions
- ❒ Mice and alcohol: killed after wine was forced down their throats

NAVS

CREDIBLE ANSWERS FOR A CRUELTY-FREE WORLD

The National Anti-Vivisection Society

53 West Jackson
Chicago, IL 60604
1-800-888-NAVS

The National Anti-Vivisection Society is dedicated to abolishing the exploitation of animals used in research, education and product testing.

NAVS promotes greater compassion, respect and justice for animals through educational programs based on respected ethical and scientific theory and supported by extensive documentation of the cruelty and waste of vivisection. NAVS' educational programs are directed at increasing public awareness about vivisection, identifying humane solutions to human problems, developing alternatives to the use of animals, and working with like-minded individuals and groups to effect changes which help to end the suffering inflicted on innocent animals.

Printed on recycled paper

NAVS Bulletin Sept. 1995

Dissection Issues

Why Instructors Adhere to Dissection

By Pat Graham,
Director NAVS Dissection Hotline

Every week at the NAVS Dissection Hotline we receive reports of students who are still being denied alternatives to dissection experiments, and of failed efforts to implement student choice policies. My heart goes out to the students who sincerely want to study science in a humane and compassionate manner, who want to make a difference in a world increasingly violent and insensitive to the plight of people as well as animals.

Teachers are notoriously overworked and underpaid. It's easy to see how they may sometimes lose sight of the tremendous power they hold to shape attitudes in young people. It can be difficult to hear the small voice of a single student above the everyday classroom din; to recognize how truly traumatic the experience of animal dissection can be for some. It's far easier to dismiss objections as unfounded and unreasonable, or as simply invalid.

Much more challenging is to take the time and effort to stop and listen to the student who is asking for an alternative. For an adult who holds different views to understand adolescents' ethical objections is admittedly asking a lot. Every year, teachers oversee multiple dissection exercises which go unquestioned, and the instructors themselves probably engaged in the practice extensively in training. To call into question the ethics of such "acceptable" experimentation is to apparently question the ethics of the teacher as well. This can be a bitter pill for a teacher to swallow, and a constructive response requires a measure of good will in addition to an open mind. Regardless of the number of compelling arguments against dissection–and there are many–some educators stubbornly cling to the view that dissection is the only way to teach life science as all students actually benefit from the experience, even when forced to participate beyond their objections. Why?

When efforts to implement choice policies fail, we endeavor to find out what went wrong. The most common problems appear to stem from the following:

Scientific narrow-mindedness: Although "scientific" thinkers like to believe they are open-minded, in truth, scientists are human and tend to carry biases into any situation. This is especially true when attachment to a particular option exists. Teachers who participated in animal dissection exercises themselves, and who have been teaching dissection for years, may justify the continued use of dissection by refusing to objectively evaluate the evidence which supports alternatives.

Fear of Change: Although there may be no rational reason to expect a student choice policy to cause disruption in the classroom, some teachers or administrators will adamantly insist that allowing students to choose an alternative to dissection will precipitate an overthrow of discipline. "Floodgate" arguments are not the most logical, but are cited regardless.

Resistance to new methods: After careful examination, we have concluded that teachers will occasionally be opposed to implementing new teaching methods simply because they do not want to spend the time to learn the new methods. A surprising number of teachers are still computer illiterate, and resist learning computer programs which are suitable alternatives to dissection. Computers are becoming an integral part of academic life, and that role will continue to increase. When a student is deprived access to viable learning methods, he or she is handicapped as far as useful, applicable learning experiences are concerned.

Inability to understand an individual's ethics: The

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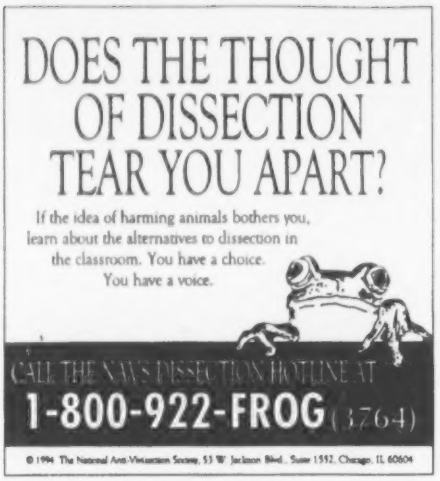
concept that animals have the right to live their lives unencumbered by humans, or the belief that killing animals cannot be justified for dissection experiments may go against a teacher's traditional held views and opinions. But even when educators do not agree with the beliefs held by students who oppose dissection, they can–and should–learn to understand and respect those differing beliefs.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Belief that desensitization is beneficial: The idea that dissection desensitizes students to violence to animals is controversial and needs to be explored in greater depth. However, many teachers will actually promote the belief that desensitization is beneficial for the student; by confronting his or her "fears" through dissecting an animal, the student is somehow empowered and strengthened to deal with the real world. Like a rite of passage, dissection is perceived to engender a sense of responsibility and maturity in this scenario.

From the calls received at the Hotline, we can determine that this is simply not true. A great many students are likely desensitized by the experience, but not to anyone's benefit–with the exception of members of the animal research and biological supply communities. Most students who call us for help experience emotional and psychological distress, in some cases even trauma, at the prospect of dissection. This group includes many students who have dissected animals in previous classes. These students' feelings are not based on fear, but rather on a reluctance to violate feelings of compassion and respect for animals merely for a better grade.

Denial: It is not unusual for teachers to deny that a problem exists, to insist that their students actually enjoy dissection, and those who do not will learn to appreciate the experience. When examined closely, what usually comes to light is that students are intimidated by teachers who announces that dissection is part of the curriculum and all students are required to perform *without exception*. If a student still objects, that student is intensely pressured to at least observe a dissection. Without assistance, such as that provided by the Hotline, most students will not press the issue. Subsequently, no problem is ever perceived by the teacher.

It is also common to deny that cruelty is involved in the raising, capturing and killing of animals for dissection. Some biological supply companies are now including a statement with specimens to the effect that the animals are "obtained in a humane manner"–without defining "humane" or explaining how the animals were obtained, or killed. Ignoring all evidence to the contrary, some teachers still maintain that no cruelty is involved in dissection. In truth, it is inevitable that cruelty is involved in an enterprise which profits from the acquisition and death of animals for classroom experimentation.

A recent Associated Press article reports that in Monterey, Mexico "Authorities raided a chicken farm where 800 dead cats were found in piles with terrorized looks on their faces after being killed for U.S. laboratory research. Officials...were looking for the owner...whom they said was trucking the dead cats across the U.S. border where they were bought by schools for laboratory projects. Workers at the ranch told health officials the cats were killed by sticking a piece of wood in their mouths to keep them still and cutting their throats."

Cats are used extensively in high school and college anatomy classes, although not as frequently as frogs, which are used at all levels. Frogs are harvested for dissection by methods few would consider "humane," usually captured in the wild, stuffed into sacks and trucked to biological supply houses. Those who survive the journey without suffocating are then killed by drowning in alcohol before being preserved with other chemicals.

Even when all efforts to educate the educators fail, and a student choice policy is not passed, progress is made every time a student raises questions about dissection. Teachers and administrators have been forced to look at the issue seriously and to question their own attitudes. Evidence has been presented which will appear again and again over time. The "problem" of students objecting to dissection is not going to disappear, and the voices are growing louder and louder with each passing year. Eventually, and with persistent effort, changes will occur. The services provided by the NAVS Dissection Hotline are continuing to help create these changes, and we are committed to this at every level. □

NAVS Bulletin Fall 1996

Dealing with Ridicule

by Pat Graham
NAVS Dissection Hotline Director

One of the most difficult aspects of refusing to dissect can be dealing with ridicule. Students who will not "go along with the crowd" are sometimes singled out for unfavorable special attention by classmates and teachers alike. This most often happens when there are no other students in the class who are willing to request an alternative to dissection.

A common scenario involves a middle school or high school student who is being teased by fellow classmates because of voicing an objection to participating in the animal dissection lab. An unsympathetic teacher may choose to pretend the ridicule isn't serious, or may actually join in. The result is that this student feels embarrassed, hurt and angry. Sometimes the student will avoid attending school for several days or even weeks, hoping the ridicule will stop. If the teacher has supported or participated in the ridicule activity, the student may feel a sense of loss and betrayal, also confusion. "What did I do wrong?"

Why is objecting to dissection such a big deal? What is so "stupid" about caring for animals? Many students are unprepared for the hostility encountered in response to their simple act of courage. Because they do not understand the underlying psychological reasons for the attack, some students are left emotionally distraught and fearful.

Ridicule and harassment are related, but slightly different. The American Heritage Dictionary defines "ridicule" as: *words or actions intended to evoke contemptuous laughter at a person or thing...to make fun of.* By contrast, "harass" is defined: *to disturb or irritate persistently.* Harassment carries a more serious implication, bringing forth the possibility of legal action. For the purpose of this article, we will focus primarily on what would most accurately be classified as "ridicule." In dealing with students who object to classroom animal dissection, ridicule is far more common than actual harassment.

Students and/or their parents often call the NAVS Dissection Hotline for assistance with this problem. Parents can suffer vicariously, feeling frustrated and heartbroken over the cruelty and pain inflicted on their child. This is especially true when the parents share the beliefs of the child and encouraged him or her to stand up and refuse to dissect.

When my daughter Jenifer refused to dissect a frog in her high school biology class, she was subsequently subjected to intense, long-term ridicule as well as orchestrated harassment. However, like Jenifer, most of the students who have the courage to refuse to dissect also possess a reserve of inner strength which will carry them through the ridicule stage without lasting trauma. In fact, if the problem is dealt with successfully, the student actually walks away feeling empowered.

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Depending on the severity of attack, and the grade level and sensitivity of the student, there can be different ways to successfully resolve the problem:

Approach #1—Ignore the insults and teasing.

Approach #2—Use humor to diffuse the conflict.

Approach #3—Educate the offenders.

Approach #4—Go to the administration for help. (Shame the offenders.)

When we counsel students and parents, we first determine the sensitivity of the student involved. We also try to determine how severe the ridicule is, how long it has been going on, how many offenders are involved, etc. We then discuss the four approaches with the student and let him or her determine which is most appropriate in the existing circumstances.

We explain to the distraught student that her (or his) way of thinking is ahead of its time, that eventually respect for all life will be the norm. Some people are actually fearful of those who hold beliefs which conflict with their own, which is exactly what elicits the ridicule response. We let the student know she is not alone, that thousands of students contact us every year for information and assistance with the dissection issue. The fact that this student may be the lone dissenter in her school does not mean that this student is the only one who would prefer an alternative. The request is neither unusual nor unreasonable. We encourage the student to hold this "higher vision" of compassion, and not to give too much attention to the transitory discomfort.

It can help to use self-discipline during this time to focus on other, more positive aspects of day to day living. Although the emotional pain of being ridiculed is very real for the moment, it will pass quickly. We emphasize that the practice of dissection is gradually declining as new and more effective alternatives are developed, and that in the future it will no doubt be eliminated from science curriculums entirely.

The student also needs to realize that how she deals with this problem is important, and will probably affect her on some level for the rest of her life. For example, a student who considers giving in and participating in dissection against his or her values should realize this can create a negative life-long pattern resulting in the undermining of self-respect. Ideally the student should be "walked through" and allowed to consider the consequences of each action and to imagine how he/she will feel about it in years to come.

It is important to understand that each individual has the right to draw the line wherever conscience dictates. Retaliation is discouraged because it is non-productive and usually only escalates the severity and time span of the ridicule.

We were recently contacted by the mother of a seventh grade student who was being ridiculed by fellow classmates for refusing to dissect a frog. Sara had come home from school in tears because of taunts and cruel remarks. One of the boys in her science class had placed a dead frog in her locker. When she reported the incident, her teacher verbally reprimanded the offending student, but was clearly amused by the incident. Since most of the ridicule was coming from this same student, we advised Sara's mother to speak with the teacher and stress the seriousness of both the student's behavior and the teacher's attitude. They ulti-

NAVS makes frog and fetal pig models available through their free-loan program.

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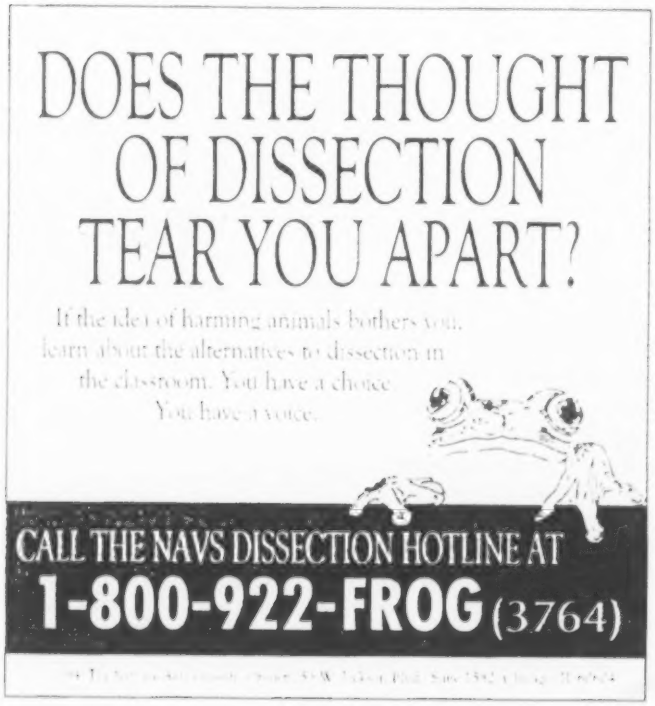
mately arranged for the offending student to write a paper on "Why We Must Respect Others' Beliefs." The ridicule stopped abruptly.

Teachers who participate in or condone ridicule are a tiny minority. Most, even if they disagree with the idea of providing an alternative, will still act professionally. Unfortunately, sometimes the teacher is the source of the ridicule. This is a particularly painful situation for the student, who may very well have considered the teacher a friend. For example, a high school student named Chris summoned the courage to approach his teacher after class and request an alternative. He did not want the other boys in his class to know of his request, to avoid ridicule.

After he explained his beliefs to the teacher, she laughed out loud and exclaimed: "That's the stupidest thing I ever heard!" Chris called us as soon as he arrived home from school, shaken and hurt by such an unexpected response. We helped him to realize how truly inappropriate the teacher's reaction to his request had been, and advised him to speak to the teacher once again.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Unfortunately, this teacher not only adamantly refused to provide an alternative, but made pointedly cruel remarks in front of the class about people who object to dissection, obviously alluding to Chris. As brave as Chris was, he was quickly losing heart. We spoke with his parents, provided strategic guidelines and encouraged them to intervene. After a brief meeting with the principal and the science teacher, Chris was grudgingly provided with an alternative, and no more was said about his beliefs.

Most of the students who are subjected to ridicule will choose to ignore it. As long as the incidents are not encouraged or condoned by the teacher, they will usually pass as soon as the dissection lab is completed. A high school student named Emily found it most effective to simply stare down her tormentors without saying a word. Apparently they found her response unnerving and stopped teasing her. Another student chose to effectively respond to taunts from classmates with a simple and disdainful "you are RUDE!"

Using humor is another tactic. When my daughter Jenifer was being ridiculed by many of the students in her high school, she had a chance to diffuse the situation once and for all. As a joke, the school held a contest where all the students voted for the teacher they most wanted to see kiss a live frog at the next big pep rally. Because of all the publicity surrounding Jenifer's refusal to dissect a frog, the students voted for her instead of for a teacher. Although initially upset, she decided to go along with the joke, provided the frog would be safely released after the pep rally. Her frog-kissing demonstration won loads of laughs and applause. She was never ridiculed by fellow students again.

For the student, one of the positive aspects of dealing successfully with ridicule is increased self-esteem and confidence. This is true even if an administrator or teacher intervenes, so long as the situation is handled in a just manner. Character development occurs because the student has summoned up the courage to stand up for what he or she believes, survived ridicule, and completed an alternative assignment. Some of our best, most open-minded young educators are those who challenged dissection themselves. Their own struggle resulted in commitment to honor the student's right to a humane alternative, or even to eliminate dissection as a teaching tool.

Why is all this so important? Because our job at the NAVS Dissection Hotline is not only to protect the students' right to a humane alternative and the many issues that go along with that. It is also to guide students in making what will be, for them, important individual choices; choices which will result in empowering and preserving the respect and compassion for all life which is inherent in their hearts and minds. This is how we continue to create the next generation of adults who will not condone or even tolerate the continued cruelty to animals which now exists in our education system.

Readers can contact Pat Davis at (800) 922-FROG or E-mail questions and comments to: davista@primeline.com.

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NAVS Bulletin Fall 1997

The Problems of Dissection

by Pat Davis, Director, NAVS Dissection Hotline

The scope of NAVS' efforts to end the needless cruelty and waste of animal suffering in laboratories and classrooms continues to make dramatic inroads in both the actual numbers of animals exploited by the vivisection industry and in the public's awareness and concern over the issues. Directly funding the development and implementation of alternative methodologies, providing comprehensive information so that cruelty-free products have become the consumers' preference and spearheading legislative efforts to provide sanctuary to chimpanzees are just some of our efforts which demonstrate credible, effective solutions for a cruelty-free world.

Denoyer-Geppert's Great American Bull Frog Model

But perhaps the most important investment of NAVS' resources has been in our support of students who seek alternatives to dissecting animals as part of their science education. By providing these young people with the "ammunition" they need today, whether information from the Dissection Hotline or a free loan from our expanding inventory of innovative alternatives in education, we are helping to ensure that future generations of scientists, health care professionals and teachers will value compassion as much as knowledge.

The precise number of animals killed for dissection purposes is impossible to gauge. Biological supply companies refuse to provide information on the number of animals they supply for this purpose, or how that number may have changed over the years. There are no statistical studies on the number of teachers who use dissection, or how many animals they dissect. However, a reasonable estimate of at least eight to 12 million animals per year is generally agreed upon, based on statistical figures of average classroom size and dissection-oriented classes throughout the U.S.

NAVS believes all students have an inherent right to have their beliefs respected and to be given the choice of a humane alternative to dissection. Currently, the vast majority of students will still encounter the dissection experience at some stage of the education process. Dissection has been introduced into the elementary curriculum at a younger age. Some second graders are now required to observe the dissection of a cow eyeball, while third and fourth graders progress to the lamb brain and cow heart. In the seventh grade, students will routinely encounter the earthworm, dogfish shark and frog. This series may be repeated in the tenth grade, adding the fetal pig. In high school Anatomy and Physiology, it is common for students to dissect a cat. And an expanded encounter with dissection requirements awaits those students who choose to pursue science as part of their college education.

However, many medical schools in the U.S. have eliminated the use of live animals in their Physiology classes and the American Medical Student Association has adopted a resolution supporting a student's right to choose an alternative to dissection without academic penalty.

Every year a new wave of students across America is exposed to animal dissection for the first time. Many young people will encounter the trauma of participating in an activity that is emotionally distressing and psychologically disturbing. Since the majority of these students will not be

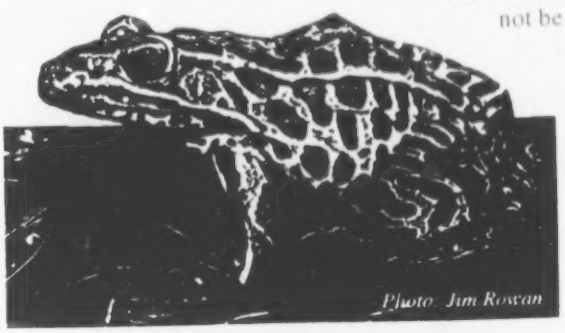

Photo: Jim Roscan

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offered an alternative project, and because they may lack the confidence and maturity to object to dissection, they will have to simply endure the experience. But what happens then?

Many teachers do not know where their classroom specimens come from. They do not stop to realize that these animals were once alive—only to be killed for the sake of a biology class. Students are often desensitized to the lifeless body in front of them.

Forced to participate in dissection, students can lose their compassion for the creature on the table before them. Exposure to the unquestioned assumption that animals are nothing more than objects to be used and discarded can have a life-long impact on the way students regard animals.

Some students will simply suffer through the uncomfortable or traumatic ritual of dissection. Many other young people are discouraged from pursuing science classes and related careers as a result of their dissection experiences. Discouraging students whose ethics preclude dissecting animals from pursuing a career in science keeps the field of science populated with only those who did not question the practice. Many of the brightest students are those who object to the frivolous use of animals in education. We all suffer when these intelligent, compassionate students turn away from the sciences because of dissection requirements.

Whatever the case, the encounter with dissection will impact the future attitude each student holds and expresses toward animals and people. This is exactly how acceptance of cruelty is created. This is how society comes to look the other way when confronted with the realities of vivisection.

The ways in which animals are harmed are much more extensive than the obvious death. The stress and trauma inflicted on animals destined for the science lab are tremendous. Frogs are routinely caught in the wild and stuffed into sacks, then driven to the waiting biological supply house. Here they are "processed" by drowning in alcohol (that is if they did not die of suffocation first!). There is documented cruelty of cats who are caught and sold for dissection. Evidence has shown that these animals are painfully poked and prodded, then gassed to death. There have even been incidents of cats being embalmed while still showing signs of life. Fetal pigs are removed from intentionally impregnated sows during slaughter. These are just a few examples of the cruel business of raising, capturing and killing animals for dissection. It does not have to be this way.

NAVS has developed an effective multi-level approach to solving the problem of animal dissection. The NAVS Dissection Hotline, combined with teacher conference exhibits and an innovative Dissection Alternatives Loan Program, are having a far-reaching and substantial impact on changing the current situation. NAVS' presence on the internet (http://www.navs.org) has also exposed a computer-literate generation to the issues of vivisection in an easily and immediately accessible format.

NAVS Dissection Hotline

Since shaping societal attitudes in young people is the best way to create a new generation of compassionate people, the NAVS Dissection Hotline (1-800-922-FROG) endeavors to reach students when they first encounter dissection. We provide the support and counseling required to help make learning science a positive, life-affirming experience. Our toll-free service response is fast enough to be truly effective. It is important to provide age and situation-appropriate assistance to all students. At every grade level and in every situation we are prepared to help. In this way we empower students to stand up for their beliefs and express their respect for animals.

The NAVS Dissection Hotline program is effective because we provide the students with a successful resolution to the dissection conflict. Through age-

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appropriate booklets giving practical advice on "Objecting to Dissection" (also available on the internet at http://www.navs.org), and through verbal counseling, the Hotline assists students carrying out their decision not to dissect. This encourages students to expand upon their newly emboldened sense of compassion for animals. In turn, this creates the citizens of tomorrow who will not tolerate cruelty to animals.

Digital Frog's Computer Dissection Program Options

Working with Teachers

Exhibiting at national science teacher conferences provides us with the opportunity to both gauge and affect teacher attitudes directly. Why does NAVS focus on reaching teachers? For every teacher who decides to offer alternatives to dissection to his/her students, there are potentially hundreds to thousands of students who will never be forced to dissect. Teacher attitudes influence students tremendously. Those who dismiss the ethical concerns about animals used in education pass along that indifference to their students.

Likewise, when teachers embrace compassion and express respect for animals by refusing to dissect, students are affected by that attitude as well. We must also consider how teachers affect their peers. When one science teacher stops dissecting animals, it creates pressure on the rest of the science faculty to at least provide alternatives to those students who request them. NAVS has developed and published materials for teachers, such as the brochures *A Rational Critique of Dissection, Science Fairs and Animals*, and a new teacher resource guide, *Animal Issues*.

In a recent informal survey of science teachers who dissect in their classrooms, conducted during a science teachers' workshop in Missouri, 54% of the teachers polled stated that they will provide an alternative project *if a student raises objections to dissection*. An encouraging 31% of the teachers who dissect automatically offered an alternative to interested students at the beginning of the dissection unit, while 15% stated that they do not offer alternatives to dissection.

Our goal is to encourage teachers to objectively examine the ethical ramifications of animal dissection and to explore humane methods of teaching biology. There is a tendency for some teachers to personalize student objections to dissection as an attack on the teacher's views. By working with teachers one-on-one we are able to help them see the issue in a more receptive manner. This helps teachers make changes based on what is right for the students, the animals, and for science education.

Dissection Alternatives Loan Program

Through the generosity of our members, our newly-expanded Dissection Alternatives Loan Program provides innovative alternatives to both students and teachers free of charge. Because of this, teachers cannot argue that alternatives are not available. We have highly-detailed models and a selection of computer programs for all of the most commonly dissected animals. There is a price to pay, however, for the rising popularity and expanded visibility of the Dissection Alternatives Loan Program, and that price is the high cost of purchasing and distributing the new generation of models and computer software.

Pierian Spring's BioLab Frog Computer Program

Working to enact legislation can be an effective tool for protecting the student's right not to dissect (see related article, p. 20). A dissection alternative bill was passed recently in Rhode Island, bringing the total number of states with dissection choice laws to five, including: Florida, California, Pennsylvania and New York. Each county in Maryland has a policy giving students a choice. Louisiana has a House Resolution that allows students to choose an alternative to

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dissection, which was passed in lieu of a proposed state law. Student choice bills are currently pending in the Maryland and Illinois legislatures, while the City of Chicago already has a student choice policy in effect.

If trying to pass a state law seems daunting, consider working at your local level to have a policy established. The NAVS Dissection Hotline can provide you with guidelines and a sample policy. We have extensive experience working with school boards and

NAVS Model Frog Saves the Day for Compassionate 8th Grader

Dustin Stewart is an eighth grader who attends Rocky River Middle School in Rocky River, Ohio. He maintains an "A" average in science. Last year in his seventh grade science class Dustin was told he had to dissect a frog. He objected to the assignment and asked for an alternative.

What made Dustin decide not to dissect? "I was raised in growing up to love animals and I think it's cruel to take an animal's life for the purpose of dissection. Careers should be decided first to know if dissection is necessary. It's just a waste for a lot of people."

When Dustin first found out he was supposed to dissect, he approached his science teacher, who told him there was "no way out of it." A girl in the same class the previous year had chosen to take a "zero" for the project because she wouldn't dissect.

Dustin Stewart (right) and friend Joey Willis examine NAVS' Great American Bullfrog for their alternative class project.

After approaching his teacher directly, Dustin brought a note from his parents asking to be excused. While the teacher disregarded the request to excuse Dustin from the dissection or to provide an alternative assignment, he informed Dustin and his parents that he "wouldn't hold it against Dustin" if he chose to take the zero.

Dustin's mother, Cheryl, decided to take the matter further, to the school's administrators. Although the administration initially backed the teacher, Cheryl's diligent efforts—which included going to the school superintendent directly—finally paid off. Dustin was given permission to complete an alternative project and he contacted NAVS for the free-loan of a bullfrog model.

While this should have been the end of Dustin's trouble, that was far from the case. Cheryl had warned Dustin he may encounter harassment from some of the students at his school, but they were not at all prepared to deal with remarks from other teachers. A social studies teacher in his school told him outright that she "couldn't understand why he couldn't 'take' the dissection." She justified her view that "it's been going on for years" and that she "enjoyed it when she was a kid; it was part of the curriculum."

But because of Dustin's courage and willingness to stand up for his beliefs, and the wonderful support given by his mother, the Rocky River Middle School will now provide alternatives to students who object to dissection.

This is the first time Dustin ever encountered dissection.. When asked what he will do when this comes up again in the 10th grade, Dustin asserted that he will do the same thing again, because he would rather work on a model than cut up an animal for no reason. NAVS' Dissection Hotline will be there to help in another two years so that Dustin's high school will have its dissection alternative plan in place, with both teachers and administrators supporting the change toward better science education.

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administrations! Also remember we are here to answer questions, to help you refute objections and to address any problem situations that arise.

Readers can also help by spreading the word about the NAVS Dissection Hotline toll-free service. Contact other animal advocacy groups that have a newsletter, or write a letter to the editor of your local paper encouraging parents, students and activists to get involved at their local schools. Another helpful tactic is to contact your local schools or school district boards and inquire about the current policy for students who object to dissection. If you find there is no policy, offer to send them information about policies and alternatives to dissection. Then call the Hotline and we will mail them a packet of information.

Your support for the Dissection Alternatives Loan Program is essential. Ordering the latest videos, computer programs, and plastic animal replicas is expensive. One plastic model frog costs NAVS $550, but one model can reach the hands of dozens of students in just one year. In order to help NAVS maintain an extensive supply of alternatives for *all* who are interested, please give thought to donating to the Dissection Alternatives Loan Program. Call 1-800-888-NAVS for more information.

Substantial progress has been achieved since the inception of the NAVS Dissection Hotline in 1989, but the problem still affects millions of animals and countless students each year. Our efforts must not only continue, but need to be expanded upon. The outlook is clearly positive. The dissection issue continues to be a critical force in shaping attitudes towards animals in our society.

Although our work at NAVS is challenging, constantly demanding the development of new strategies and problem-solving tactics, it is working. For as we continue to empower today's students and others who speak for the animals, our collective voice grows louder—impacting science education in a manner which ensures dissection *WILL* eventually become a thing of the past.

Landmark Alternatives Program Leads the Way

The NAVS Dissection Alternatives Loan Program, the first program of its kind and the most successful to date, exists and is successful only because of you, our members. Through your generosity, NAVS has been able to purchase not only the initial model bullfrogs, but has been able to expand the resources available to include numerous other commonly dissected species.

Working in tandem with the NAVS Dissection Hotline, our accomplishments have been extraordinary.

- NAVS exhibits annually at the National Science Teachers Association conference, presenting dissection alternatives and discussing the issues. For every teacher we reach, over 100 students can be affected.
- NAVS has become the primary resource in locating viable dissection alternatives for teachers at all grade levels, as well as for entire school districts.
- Dissection Hotline and Alternatives Loan information is now available on the NAVS internet web page. Our web page is at http://www.navs.org.
- The Dissection Alternatives Loan Program has expanded its resources to include the most commonly dissected species, including cats, fetal pigs, sharks and rats.
- Dissection alternatives through the Loan Program are available for all grade levels in model form, and state-of-the art computer software and CD-ROMs.
- Dissection alternatives have been demonstrated to the Illinois State House of Representatives, assisting in the proposed passage of a state law which would provide the option of a dissection alternative to any student, grades K-12.
- The NAVS Dissection Hotline reaches over 10,000 students every year, where one-on-one counseling and the mailing of free, printed informational books are available.
- NAVS has participated in numerous teacher's conference workshops on both the topic of dissection and the alternatives available, reaching teachers across the country.

We owe a large part of our success to you, our members for your generous support in helping to provide humane, effective alternatives to the dissection of live and once-living animals in classrooms nationwide.

NAVS Alternatives Set the Standard for Humane Education

by Linda Petty, NAVS Staff

While in my eighth grade science class, the usual "rite of passage" of frog dissection was upon us. Only one frog was to be dissected, by the teacher, and the class would gather round the table to watch. It unnerved me when I realized the object of the dissection was alive when we walked into class that day.

Holding the live animal in his hands, the teacher explained how he would "pith" the frog prior to dissection. Pithing, he said, requires inserting a needle-like object through the base of the frog's skull to destroy the spinal cord, resulting in an instant and painless death for the animal.

Carolina Biological's Shark Model

Amid groans from the class, he performed the procedure, pinned the frog to the dissection board, and began his first incision. The frog began to pull against the pins, struggling to free itself from the pain of the scalpel. This, by the teacher's admittance, was no ordinary muscle response. The pithing had not been successful in killing the animal, or even in severing the spinal cord to the point where the animal would feel no pain. The teacher, who did feel remorse in causing the animal such agony, repeated the procedure a second time. This time he was successful.

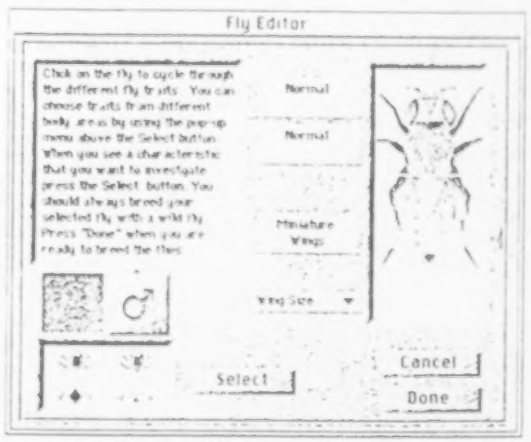
Ward's Fetal Pig Model

I don't remember what we learned that day regarding frog anatomy, physiology or anything concerning scientific study. What I do vividly remember to this day is an animal struggling against his confines in excruciating pain. Perhaps that was the better lesson after all.

Computer Technology Replaces Dissection

While few, if any, dissection alternatives existed when I was in school, today there are alternatives in the form of models, computer software and CD-ROMs, all of which have become increasingly sophisticated in recent years. Models have become exceedingly detailed and life-like, while CD-ROMs and software enable the student to click on scalpels, scissors, tweezers or other instruments to "cut" through a video-taped specimen and "remove" or display each individual organ. Poisonous or harmful substances such as alcohol and cocaine can be "placed" with an "eye dropper" on a beating heart displayed on the screen to gauge the effect of these substances on the circulatory and respiratory system, and the results can be immediately charted on-screen.

Generations of fruit flies can be "bred" in seconds to see the result of dominant and recessive genetic traits.



Pierian Spring's Fruit Fly Computer Program

Where once, at best, only simplistic models and crude software programs existed, now high-tech, sophisticated alternatives are easily available and at a tremendous cost savings compared to the actual specimens and laboratory equipment. The ethical savings are immeasurable.

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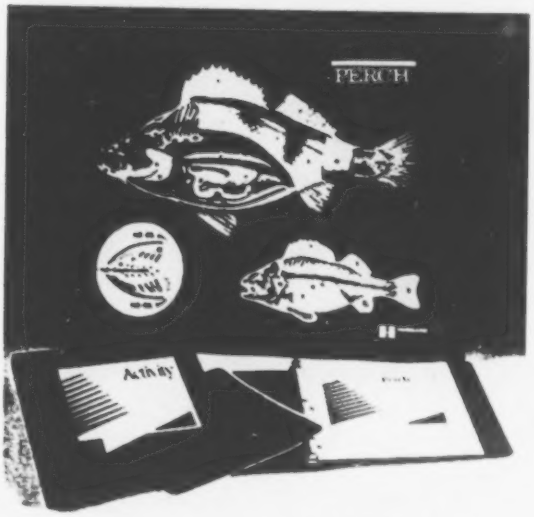
Alternatives Program Expands

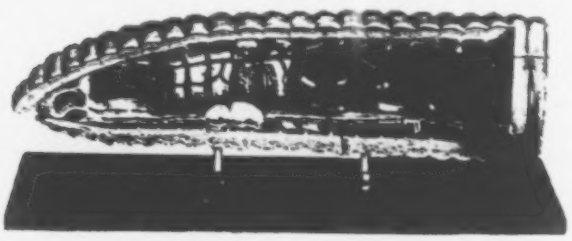
NAVS' commitment to promoting the use of alternatives to non-human animal dissection has resulted in an increasing demand for alternatives throughout the U.S. and Canada. Several years ago we helped launch the **Dissection Hotline** where thousands of students each year



Carolina Biological's Perch Relief Model

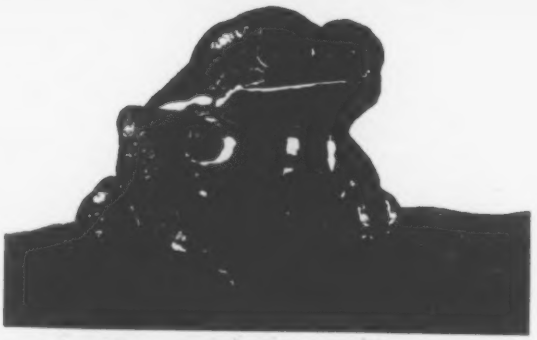
are counseled in approaching their teachers to request a dissection alternative. Prior to that, through the generous donations of our members, we began the **Dissection Alternatives Loan Program** which enabled NAVS to purchase model bullfrogs, the most commonly dissected animal. These alternatives have been continually loaned, free-of-charge, to students, teachers and entire school districts for classroom use.

Recently, we have expanded the program to include some of the most advanced alternatives available, including models of cats, fetal pigs, sharks and worms. Videos,



Carolina Biological's Earthworm Model

computer programs and CD-ROMs on many species have also been added to expand the range of species and needs of the students. This program enables us to reach hundreds of students who must either find their own alternative to



NAVS MEMBERS CAN HELP PROVIDE MORE ALTERNATIVES TO STUDENTS AROUND THE COUNTRY!!!

The National Anti-Vivisection Society established the **Dissection Alternatives Loan Program** four years ago to fund the purchase and distribution of alternatives to students and teachers across North America. The program has been an overwhelming success! With the acquisition of new animal models, computer programs and other alternatives, the free Loan Program is set to meet the initial demands of a new generation of students.

But success has its price. Increasing demands for this successful program means that it takes more money to purchase the software and models and even to ship the alternatives across the country.

YOUR HELP IS ESSENTIAL in guaranteeing that we will have the alternatives students and teachers need for more humane education.

To make a donation directly to benefit the **Dissection Alternatives Loan Program,** dedicate your check, money order or credit card donation (payable to NAVS) for "The NAVS Loan Program" and those monies will go directly into the purchase and promotion of alternatives to classrooms everywhere. Please be generous in teaching a new generation of students that science education doesn't have to be a "gut wrenching" experience.

Send your donations to:

The National Anti-Vivisection Society
Department 77-9108
Chicago, IL 60678-9108

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New Ad As Seen in the October Issue of *Seventeen Magazine*

the actual dissection, teachers who wish to use a trial alternative in their classroom to test its viability, or teachers interested in enhancing their teaching methods by the use of alternatives. This highly successful program, the first of its kind, has enabled NAVS to make a direct impact on hundreds of students' lives and significantly reduce the number of animals killed in the name of education.

Teachers Embrace New Technology

In addition to the many new alternatives available, I have noticed an increased awareness and interest within the teaching profession regarding dissection alternatives. When NAVS first began exhibiting alternatives at science teachers' conferences several years ago, few teachers knew viable dissection alternatives existed unless they stopped at our exhibit to discuss the issue.

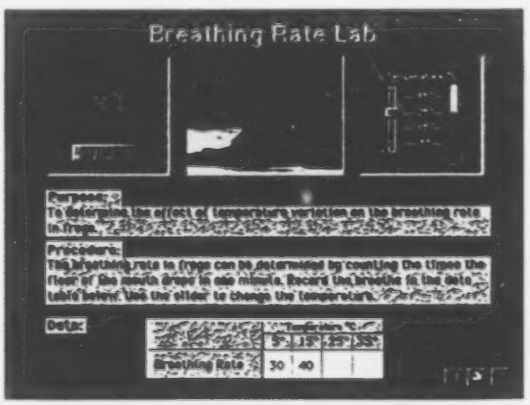
Now, we have teachers who specifically approach us to ask where other exhibiting vendors might be located who offer dissection alternatives, either in a specific format or on a particular species. Also, a far greater number of teachers now admit, when questioned, to the use of dissection alternatives within their own classroom. This is a tremendous change from only a few years ago.

As young teachers graduate into their profession, most enter with a determination to give their students the best possible education in the most exciting manner they can devise. They know their job is not only to teach the subject matter, but to get their students excited about what they are learning. This excitement leads to more interest, better grades and the possibility that the student may actually enter a field of science as a career.

Many students who are opposed to dissection, and are forced to participate, are turned off by the experience and often begin to shun the sciences, in direct opposition of the love of learning that teachers should be instilling in their classrooms. Many new teachers also realize that while the sensationalism of cutting open an actual specimen will always appeal to some, computer skills are just as exciting (and probably more important) to these young adults.

Elimination of Out-Moded Teaching Methods

NAVS is making tremendous in-roads in educating students and teachers regarding viable alternatives. Unfortunately, while every year the percentage of teachers using dissection alternatives increases, there are still many teachers who believe that dissection is the only way possible to learn the anatomy of another organism. These teachers believe there is no substitute for the feel, smell and experience a student gets during the dissection process.



Digital Frog's Computer Program

Dissection has been a means of teaching and learning anatomy for hundreds of years. In 1559, Realdus Columbus wrote a detailed book on the subject. However, students in elementary and high school learn human anatomy throughout their science

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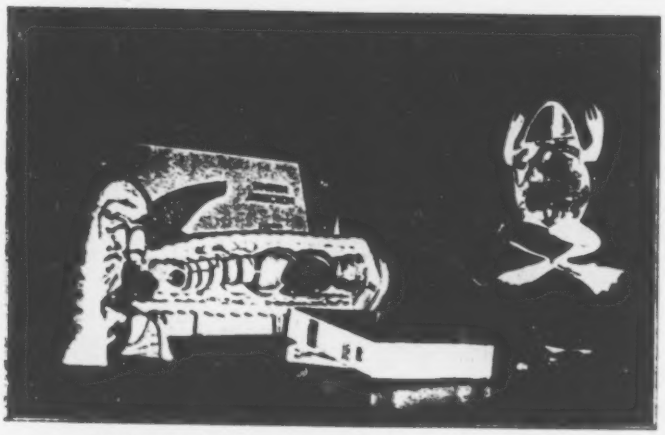


Linda Petty displays some of NAVS' new loan offerings.

courses, and no human cadaver is wheeled into the classroom so the students can get the "feel" of the experience.

In fact, unless your career path takes you into the upper levels of the medical field, you never get a hands-on experience in dissection when studying human anatomy. Surely, if we can study human anatomy without dissection, we can study the anatomy of any other species without physical dissection. NAVS, through its programs, is helping to make this a reality.

In addition to her position as NAVS' Manager of Financial Operations, Linda Petty coordinates the NAVS free Dissection Alternatives Loan Program, sending models and other alternatives to dissection across the country.

Insects: Humane Alternatives Instead of Collection

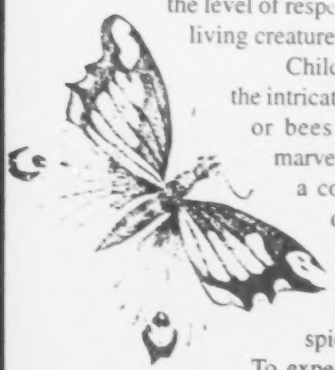
by Pat Davis, Director, NAVS Dissection Hotline

At the NAVS Dissection Hotline we sometimes receive calls from young students or their parents concerning insect collections. It is still common practice for elementary and middle school science teachers to assign each child in a class the task of collecting, killing and mounting numerous insects as a graded project.

While this assignment does not always involve dissection, certain elements are common to both dissection and insect collection to which a student may raise objections.

Both experiences:

- Can cause students to feel uncomfortable with the harm inflicted upon innocent creatures;
- Require the student or parent to challenge the status quo by confronting the teacher and requesting an alternative;
- Have the potential to create a desensitizing impact on the level of respect the student develops for other living creatures.



Children often spend hours watching the intricate teamwork of ants in their nests or bees in their hives. Who has not marveled at a butterfly emerging from a cocoon? Who has not rescued a drowning bug from a water bowl, or assisted a beetle stuck on his back? Who among us was not moved when Charlotte the spider died in *Charlotte's Web?*

To expect a young person who enjoys sharing the world with all kinds of insects to suddenly show enthusiasm for the opportunity to capture, kill and mount them is insensitive at best, and potentially damaging at worst.

Suggested Alternatives

As with all dissection, there are more effective ways to teach children to appreciate the wonders and diversity of nature without bringing death into the classroom. Some suggestions for more humane alternatives are:

- ➤ Take advantage of the numerous educational insect nature films available;
- ➤ Draw posterboard diagrams of different insects in different stages of development;
- ➤ Have students find insect photos in nature magazines or other sources and pin those to a board;
- ➤ If live bugs are brought to the classroom, they can be returned to their natural habitat as soon as possible or, better yet, take a short fieldtrip to the playground or a nearby field and watch insects in their own homes;
- ➤ Investigate biological supply catalogues that offer a wide variety of insect models for close study by an entire class.

Respect for life is an attitude that must be taught and nurtured from the earliest years. It is to our benefit to do so. Although insects are small and easily dismissed as inconsequential by many, they are in reality wonderful, busy creatures with extremely complex and useful lives. Teachers and parents alike should celebrate a child's early appreciation for all forms of life, including insects!

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NAVS Expressions 2 : 1994

A LESSON PLAN FOR ANIMAL CRUELTY

Just what are our schools teaching children?

It would seem that in a life science class, the emphasis would be on just that–life. To open young minds to the beauty, wonder and mystery of life must surely be a science teacher's greatest reward. Yet in many of today's classrooms, from the junior high school level on up, the science of life has become a lesson in death.

That's because the practice of dissection remains one of the most firmly entrenched exercises in our educational system since it was introduced into the U.S. school curriculum in the 1920s. To this day, few students graduate from high school without the obligatory "frog lab" or fetal pig dissection.

In addition to regular classroom activities, animals are used at science fairs. Some of the data presented at the 1994 finals of the International Science & Engineering Fair (ISEF) included the results of experiments on vertebrate animals. One high school student received recognition for feeding rams a diet high in fat and /or vitamins, then administering electric shock to the animals' accessory sex glands. Another was honored for administering a low-calcium diet to chicks, then killing the animals with carbon dioxide asphyxiation.

What is accomplished by demanding that students cut into and dismember a living creature? Certainly, with highly sophisticated models and computer simulations widely available, they are not gaining any insights that could not be just as effectively learned from a replica or a computer screen.

Instead, dissection debases and denigrates the entire educational process. Instead of teaching respect for life and the natural world, it sends the message that life is cheap, expendable and unimportant. Furthermore, dissection desensitizes young people to the plight of animals and all forms of suffering.

Still, dissection prevails in our schools for a variety of reasons. At one level, many teachers cite "academic freedom" when challenged about the practice. They believe that they have the right to determine all aspects of curricula. Some teachers tend to resist alternatives to dissection because they are forced to go through the effort of learning new teaching methods. Others insist that students should not be deprived of the tactile experience of feeling actual internal organs. Yet is this a necessary life experience for the vast majority of students who will pursue careers completely unrelated to the life sciences?

There are those, too, who profit handsomely from dissection, particularly

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biological supply houses and animal breeders. Millions of animals are raised and killed specifically for dissection. Some are seized from animal shelters or stolen from homes to supply classrooms. While many people believe that these animals are humanely euthanized, evidence suggests that quite the opposite is true. Generally speaking, these hapless creatures lead short, horrible lives before meeting their ultimate fate on a cold laboratory table.

Recently, the World Society for the Protection of Animals (WSPA) uncovered an organized scheme in which companion cats were being shipped from Mexico to the United States for dissection in schools. It seems that "kidnap teams" drove through Mexican suburbs, using loudspeakers to announce that they would pay $1 per cat, tempting poor and hungry children to round up neighborhood cats. Captured cats were then taken to makeshift slaughterhouses, where they were dragged from their cages with a metal pole and noose, placed in a cloth bag in groups of ten and drowned in water-filled barrels.

In 1990, People for the Ethical Treatment of Animals (PETA) documented the abusive treatment of animals by the Carolina Biological Supply Company, the largest biological supply house in the United States. In videotaped evidence, PETA documented cats and rats being embalmed alive, squirming and twisting on steel tables as the burning liquid entered their veins. Although the courts later cleared Carolina Biological of embalming live cats, many schools stopped purchasing supplies from that company.

Another aspect to the dissection issue is the devastation it can wreak on the environment. When large numbers of animals are removed from their natural habitat, it causes severe ecological damage by upsetting the balance of nature. For example, collecting massive numbers of frogs in Bangladesh has caused insect overpopulation, resulting in serious crop damage and the spread of disease.

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YOU CAN MAKE A DIFFERENCE

Nurture compassion and respect in your children.

Children have a natural fascination and affection for animals, and it is our responsibility as parents and care givers to respect that natural love and encourage it wherever possible.

The NAVS Dissection Hotline receives calls every day from adults who were ridiculed or bullied into performing cruel acts on animals. Don't let that happen to your children. Show them through your words and actions that respecting animals is the right thing to do...and let them know you will support them if they're forced to take a stand.

JENIFER'S STORY

The Inspiration for the NAVS Dissection Hotline.

In 1987, Jenifer Graham, a California tenth grader, refused to dissect a frog in biology class. School officials insisted that Jenifer either participate in the dissection exercise or fail her class. Her mother, Pat, took Jenifer's plight to the school board with the aid of the Humane Society of the United States (HSUS). Thus began a four-year court battle that culminated in the passage of a California law which guarantees a student's right to be given a humane alternative to dissection without compromising his or her grades.

Jenifer's struggle and triumph inspired the NAVS Dissection Hotline, a toll-free service that students who object to dissection can call for free information, counseling and support. The NAVS Dissection Hotline provides a number of other services on a nationwide basis, including developing a strategy to secure a humane alternative for students who encounter hostility and resistance from teachers and school administrators. The NAVS Dissection Hotline also works with students to introduce "choice" policies at their schools.

The NAVS Dissection Hotline staff works tirelessly to encourage students' compassion and respect for animals and to foster understanding and tolerance for students who object to dissection.

WHY MUST STUDENTS DISSECT FROGS, ANYWAY?

- Frogs are cold-blooded, while humans are warm-blooded.
- Frogs have a three-chambered heart, and humans have a four-chambered heart.
- If the optic nerve of a frog is cut, it will be able to see again within weeks; the same damage causes permanent blindness in humans.

For further information, call the NAVS Dissection Hotline at

1-800-922-FROG

(1-800-922-3764)

A NEW KIND OF CLASSROOM

Where compassion and scientific knowledge come together

"Children hold the key to changes in the exploitation of animals. They will respond to our examples, whether they be of cruelty or compassion, much more than they respond to our words. It is simply not enough to provide lip service when action is required. If you desire change, speak out and take action to achieve that end."

Frankie Van Horn
Sixth-Grade Teacher
Brownsville Middle School
Pensacola, Florida

Where children are our hope for the future, alternatives to using live animals are our hope for a new kind of classroom...one that nurtures respect for all life while teaching about the mechanics of the human body.

In many schools across the country, the lifeless, embalmed body of a frog, cat or fetal pig is being replaced by computer simulation programs, detailed three-dimensional models, videotapes, charts, posters and other materials that explore basic anatomy and physiology without harming living creatures.

Today, lessons in anatomy and physiology are being conducted through non-destructive means *without sacrificing any academic rewards*. More and more teachers are fostering in young minds the concept that life is appreciated through respect for all its forms, including the environment and natural resources.

One of the most popular instructional tools available is *Operation Frog*, a computer simulation of a frog dissection that works on Apple II and Commodore 64 computers. Students can actually move organs using this program–a very effective way of teaching structure and function.

For those teachers who insist that students must see actual dead frogs being dissected, videos of a dissection are also available.

Learning about life through non-destructive means.

Here are just a few examples of humane alternatives to dissection which can be purchased from companies that do not sell animals:

- Three-dimensional vinyl zoological models of a frog, earthworm, grasshopper and perch.
- Human anatomy torso models.
- Plastic skeletons and skulls.
- Three-dimensional imaging videodiscs on human anatomy.
- Anatomical charts.
- Biology overhead transparency atlases.
- Interactive computer programs.

Critics of these alternatives charge that they are too costly for already stretched school budgets. However, a one-time investment in these materials pays for itself in the long run because they can be used over and over again. Animals, on the other hand, can only be used once, and then only by a few students at a time. A three-dimensional model, for example, can be viewed and utilized by an entire classroom year after school year.

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FREE LOANS FOR HUMANE EDUCATIONAL MATERIALS NOW AVAILABLE.

As part of our efforts to provide credible solutions for a cruelty-free classroom, the National Anti-Vivisection Society makes nonanimal alternatives available to schools and institutions on a free loan basis. For more information on these materials, please contact the NAVS office at 1-800-888-NAVS (1-800-888-6287).

A frog for all seasons.

This state-of-the-art model frog, shown below, is a handpainted, anatomically accurate replica of the adult female bullfrog, *Rana catesbeina*. Composed of a durable plastic compound, it is approximately two-times life size (21" x 15" x 4"), re-creating ten organ systems. The model frog can be divided into four parts, including a detachable, three-chambered heart. More than 175 organs are numbered on the model and identified in the accompanying key, which also illustrates the male bullfrog reproductive system.

Advances in Humane Education: Alternatives in Biology, a videotape overview of many new methods that replace animal dissection, is also available on a free loan basis from the National Anti-Vivisection Society.

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This large-scale model frog lets students experience the wonder and fascination of a living organism while maintaining respect for life and ecological integrity.

CUTTING OUT DISSECTION FOR MEDICAL STUDENTS

Because of the many nonanimal alternatives now available, the following U.S. medical schools use no animals to train their medical students:

Tufts University
New York University
Ohio State University
Michigan State University
State University of New York, Stony Brook
University of Michigan
University of Washington
Hahnemann University
Louisiana State University
Mercer University
University of Maryland
University of New England
College of Osteopathic Medicine

All but two medical schools in the entire country–Uniformed Services University of the Health Sciences, Bethesda, MD, and the University of Colorado, Denver–offer their students nonanimal alternatives. In 1986, the American Medical Student Association adopted a resolution supporting a student's right to choose an alternative activity to dissection and to be free from penalties or faculty intimidation when they refuse to dissect.

RATING YOUR CHILD'S CLASSROOM

Do you know if your children are attending a cruelty-free classroom? Use this checklist to see if your schools' biology teachers are fostering respect for life in all its forms, the environment and natural resources.

Does the classroom foster a safe, non-violent atmosphere?	❑ YES	❑ NO
Does the teacher encourage young people to find non-violent solutions to problems?	❑ YES	❑ NO
Do children learn that the earth consists of a vast, complex ecological system of which human animals are only a part?	❑ YES	❑ NO
Does each lesson teach compassion and respect for animals?	❑ YES	❑ NO
Does the teacher support those students who oppose dissection?	❑ YES	❑ NO

NAVS Bulletin December 1994

DISSECTION: A FLAWED TOOL IN EDUCATION

By Lester Y. Ichinose, Ph.D.
NAVS Science Advisor

While the community of science educators supports and demands the very latest in computerized technology to participate in tomorrow's information superhighway, it stubbornly defends the continued use of its most flawed tool–the dissection lab animal.

Educational policy mandating animal dissection in our public (and private) school biology classes is a disgrace, not only because prepared animals are poor and misleading representations of living systems, but also because of its unethical nature. Dissection also contradicts the goals of multiculturalism in education and a desire to revive the teaching of ethics across disciplines.

This stubborn resistance to abolish dissection in schools nullifies national and local movements to modernize educational systems and methodologies in science education, including biology instruction. Emotionally-charged defensive reactions by educators, however, continue to perpetuate the outmoded and unethical practice of dissection.

Why do educators resolutely uphold this contradictory philosophy of dissection in science education, particularly in light of growing ethical and scientific arguments against the increasingly unnecessary practice? To answer this question, we must first understand the nature and goals of science education.

What is Science? It is a *body of knowledge* gathered and organized by scientists. This includes facts, laws, theories, and original observations confirmed and consequently accepted by the scientific community. Science is also an *objective method of discovery* with which scientists make observations, construct laws, and propose theories. Finally, science is a *philosophy* as scientists interpret, explain or predict–on a scientific basis–physical or biological events that are beyond their abilities to investigate objectively.

What is Science Education? At best, it is an educational system designed to increase science literacy, competency, and understanding of the scientific process in students from Kindergarten through grade 12. At worst, it is a static, traditional program designed as an authoritative preparation in science competency. The versatility of a program is usually related to the students' grade level. For example, an integrated science program is generally offered from Kindergarten through the middle school years. But in the upper school (grades 9-12), this creative approach often degrades into the traditional biology, physics and chemistry course offerings.

It is interesting to note that philosophies and methods of teaching science from grades K through 8 are generally far more imaginative, less traditional and didactic than science courses in the upper school. Why is this the case in most schools? Educators feel that younger students lack the academic skills, cognitive abilities and maturity to understand content-oriented science courses. Consequently, elementary schools take great pains to design creative programs that foster the development of investigative skills as the vehicle for understanding.

But when students enter high school, their science experiences must translate into performance on highly content-oriented national standardized tests–the Achievement Test (ACT) and the Scholastic Aptitude Test (SAT). Hence, high school science curricula and lesson plans are often geared to prepare college-bound students for these important examinations. In other words, colleges drive the content of these tests, which, incidentally, also accept the tradition of animal dissection.

So it isn't surprising to discover a nation of desensitized 14-year old students dissecting a series of animals, including the fetal pig, in their ninth grade biology course.

Who Is In Charge?

Why do teachers continue to utilize and promote animal dissection? The great majority of teachers responsible for these courses are not Ph.D. biologists, but rather graduates of schools of education with an academic concentration in the field of biology or general science. While these instructors may faithfully translate textbook concepts and methods into lesson plans, most lack the deep theoretical knowl-

edge, research expertise and academic independence required for necessary change. This results in a dependence on the traditional tools of the trade: microscopes, lesson plans, texts and lab guides, biological supply company representatives purveying dissection animals and manuals, and so on.

For example, I met recently with biology teachers at a high school in Winnetka, Illinois to debate the ethics and educational relevance of using fetal pig dissections in their biology laboratories. In defending the practice, a teacher exclaimed, "That's the only way we can teach anatomical systems!"

"Nonsense," I replied. "It's obvious that you don't understand that any biological system is dynamic and measurable. Promoting the use of fetal pigs for your ninth grade biology classes teaches them nothing about life nor about living physiologies, particularly since the pig's 'systems' are underdeveloped and consequently not dynamic." I continued to explain that the concept of dynamic systems can be taught using non-living examples and models, easily translated to any biological system. Finally, I explained that promoting vivisection of living or dead animals counters any effort to teach a reverence for all life. It instead promotes the idea that morality and ethics are exclusively human domains, and apply only to our species.

This debate has been repeated many times, in many places. The arguments are the same and, unfortunately, so are the results. Nearly everyone who objects to dissection on an ethical basis in a school's biology program are students. It is unfortunate that the authoritative stance adopted by teachers and administrators results in a failure to recognize a golden opportunity–to nurture the students' desire to promote ethical behavior between humans and other animal species in the classroom. Instead, these teachers unknowingly promote in young minds an irreverent, elitist and exploitative attitude towards animals.

Eric Vilhus

Students dissecting a rabbit specimen.

Interlocking Directorates

A biological education involves teaching students not only the aforementioned goals of science, but also the evolution, interdependence and value of all species. Both teacher and student adopt the viewpoint of an observer, searching for value in life entirely separate from the human species. Unfortunately, this doesn't always happen, and animals are considered as resources for the human condition.

Some of the explicit goals and examples in biological education are consistent with the goals and practices of biomedicine. While dissection of the human body is essential in a medical school, the assumed importance of vivisection percolates down through the collegiate ranks to secondary and elementary education as a necessary tool in understanding nonhuman life.

Dissection is also related to the medical role model, as many students–wielding scalpels and probes–take great pride in their ability to perform "surgery" on an animal. While a good teacher always utilizes societal examples–human subjects and artificial models to illustrate a physiological concept or anatomical structure– a lesser instructor cites foreign concepts and irrelevant examples.

Although biomedical examples and goals in elementary science courses should not be objectionable, the biomedical community has cleverly tied the freedom to dissect with the right to use research animals, and therefore with human health. For example, an October 1988 report of the National Research Council Committee on "The Use of Laboratory Animals in Biomedical and Behavioral Research" stated that, "scientists are ethically obliged to ensure the well-being of animals used in research and to minimize their pain and suffering."

These statements summarize the role of animals not only in research, but also as live subjects or dissection animals in educational systems. The anthropocentricity regarding animals pervades our educational systems from these biological mandates. So an impressionable young teenager cutting into a frog or fetal pig not only discovers a power over other

Operation Frog (left), a software program, allows students to perform simulated dissections without harming any sentient creatures.

animals, but also trusts that his or her teacher will only promote accepted practices.

Multiculturalism in Biology Education

What is multiculturalism, and how does it relate to animal dissection in compulsory education?

The United States is finally admitting that we have a multicultural and multiracial society of humans. But our nation continues to disregard the multispecific (many species) nature of American society, and the continuing impact nonhuman animals have always made on human culture.

With this admission, "multiculturalism" is the new action word sweeping the nation and transforming educational philosophies and curricula. State governments are following the federal mandate to incorporate multicultural values in their school districts. In turn, this mandate is enforced by federal grants to states, and state funding for their schools.

Multicultural education in its present form is only the beginning. While it promotes the understanding of different human cultures within a school system to destroy interracial prejudice and bigotry, it should welcome the biologically derived "cultures" of other animal species in our society.

The Role of the Humanities in Humanizing Biology Teaching

When push comes to shove in science education, the nonhuman animal loses, usually in the form of its life, through "service" to human society. The ethical questions that arise when an animal is dissected become irrelevant when the teacher or biomedical scientist says, "It's the right thing to do." So the student is led to believe that the proper study of science, including dissection, mandates both exploitation and stewardship–concepts that are basically contradictory in practice.

But an individual's sense of moral right and wrong does not come from a proper study of science and technology. Rather, it emanates from another dimension of the human mind, one that is concerned with understanding how our various societies have evolved, *and how man and his machines have worked and played in the world of things and nature.* This has traditionally been the role of the humanities. Historical understanding, however, does not necessarily lead to application in solving today's problems by tomorrow's leaders.

Why shouldn't we provide the proper educational foundation for renaissance teaching in creating a pool of potential leaders conversant in the arts as well as the sciences? A Hastings Center report entitled "On the Uses of the Humanities" explains: "There is, we believe, no good reason why the contributions of the humanities to exigent national problems ought to be overshadowed by other disciplines."

While traditional science education helps produce future scientists, doctors and other technical professionals, their individual and professional sense of ethics emanate from the study of the humanities as it relates to the sciences.

Science education is more than a pragmatic and sterile system of objective instruction. It should provide an environment that allows the student to express something that is not learned, but rather nurtured and developed. For example, love of animals is part of nearly every person's childhood. Something is wrong when we instill in children a *Disney*-esque perception of animals that think and behave like humans. When that child grows up, he or she discovers that the anthropomorphic Bambi they loved is a lie. Subsequently, the childhood compassion for that animal is discarded along with the lie. Bambi becomes only a deer, stripped of moral value.

Therefore, the roots of dissection are embedded deep in the problems all education faces today. While objective arguments against the educational value of animal dissection are useful, they are dwarfed by the power of an ethical and moral argument. But mounting ethical arguments in the biology classroom is difficult within the confines of a traditional biology classroom. Expanding the goals of multicultural and interdisciplinary education in science teaching will provide the proper environment to make it possible.

Perhaps it will happen. Nothing happens in isolation, just as continued dissection practices have unfortunate consequences beyond the classroom. But when students no longer dissect animals, the consequences are transformed into benefits for all concerned.

NAVS Expressions 3 © 1994

FROG FAILURE

Dissection doesn't pass the test for teaching children important lessons about life.

Frogs are everywhere. There are about 3,800 species of frogs and toads, and they live on every continent except Antarctica. You can see them in ~~most~~ any river, pond or stream, although some species live in trees, while others dig underground burrows on land. If we listen closely, we can hear male frogs call females during the mating season with their characteristic croaking sound.

Because frogs blend in so well with the environment, we hardly notice them at all. So why should we be concerned when a few of them end up on a lab table in biology class?

These cold-blooded creatures may not be everyone's ideal companion animal, but, like every other animal, frogs have an important place in the ecological cycle of our planet, and their lives are intertwined with ours more than you may think. Even though frogs are not considered among the "higher" animals, most species have a delicate sense of touch and highly developed taste buds in their tongues and mouths. In fact, they can be quite finicky about what they eat–a trait usually associated with cats–and they've been known to spit out bad-tasting food.

Being cold-blooded animals, which means that their body temperature is the same as the surrounding air or water, frogs are distinctly different from their warm-blooded counterparts in the animal world, including humans. Many biology teachers insist that frog dissection is the best way for students to learn about the respiratory, nervous and circulatory systems. In addition, they say, amphibians teach important lessons about evolution and adaptability. In reality, however, the frog's most qualifying characteristics seem to be their small size and easy availability.

There are vast differences between frogs and humans. For one thing, frogs have a three-chambered heart, while we have a four-chambered heart. If their optic nerves are cut, frogs will be able to see again within weeks. The same procedure causes permanent blindness in humans. Some frog species change in color in response to changes in the surrounding temperature, light and humidity. They also breathe through their skin as well as their lungs. Their bulging eyes allow them to see in all directions, and some species can leap up to 20 times their body length.

Since dissection was first introduced into the U.S. school curriculum in the 1920s, it has become a standard, accepted teaching practice in life science classes from the elementary level through college. For more than 70 years, our nation's school system has been forcing students to dissect these amphibious creatures, teaching children some "important" lessons. The trouble is, they are lessons no parent

"Perhaps the time has come to formulate a moral code which would govern our relations with the great creatures of the sea as well as with those on dry land. That this will come to pass is our dearest wish.

If human civilization is going to invade the waters of the earth, then let us first of all carry a message of respect–respect for all life."

Jacques Yves Cousteau

wants his or her child to know.

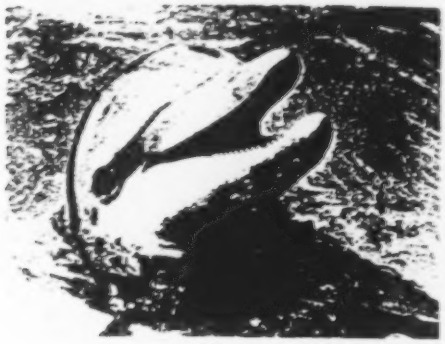
Rather than teaching children a healthy respect for life and all its complex processes, cutting into and dismembering animals promotes the notion that life is cheap, expendable and unimportant. When animals are slaughtered for dissection, we desensitize children to animal suffering, reinforcing the idea that it's okay to harm a species that we should be protecting. And when animals are taken from their natural environment, children learn that humans can take whatever they want from the natural world for any purpose–with no consequences.

Sadly, there are grave consequences even beyond the suffering of the millions of creatures used for dissection...and the hidden message about violence it sends to children. Because attempts to breed frogs in captivity have proven unsuccessful, frogs used for dissection must be captured in the wild, which upsets the balance of nature and causes many different problems for humans.

As part of a complex ecological cycle, frogs are both predator and prey. Frogs eat mosquitoes and other insects, and in turn, frogs are an important food source for bats, snakes, turtles, fish and herons. When there are not enough frogs, mosquitoes and other insects–which carry disease and destroy food crops–become too numerous. Meanwhile, the animals who prey on frogs decrease in number because there is not enough food to eat, which affects the animals who prey on *them*, and so on throughout the cycle of life.

The worldwide population of frogs is already in decline. Collecting massive numbers of frogs in Bangladesh recently caused insect overpopulation, resulting in serious crop damage and the spread of disease. In the United States and Mexico, the collection of the American bullfrog and the leopard frog–the ones most commonly used in dissection–could be threatening the future of these species while upsetting the delicate balance of our wetlands.

American bullfrogs and leopard frogs are captured mainly in Texas and Mexico by itinerant workers hired by large biological supply houses. These "collectors" hunt for specimens along the banks of rivers, streams, ponds–anywhere the creatures can be found. Any frogs they find are thrown into burlap sacks, which are then stacked high in trucks that deliver the hapless creatures to a processing center. Those frogs who don't die along the way are drowned in alcohol and preserved in chemicals, and then shipped to schools throughout the United States.



Marine Mammals

Aquariums and marine parks often use education to rationalize their practice of capturing whales and dolphins in the wild and putting them on display. They insist that when people have an opportunity to observe live marine mammals up close, they tend to have more respect for them and to support conservation efforts.

The whales and dolphins who must bear the misfortune of being captured pay a huge price for such "respect." Consider:

- Cetaceans (dolphins and whales) communicate over hundreds of miles through an extraordinary sensing ability called echolocation. In the tight quarters of captivity, these intelligent, communicative animals are confused and overwhelmed by the garble of their own voices—and it may even be painful for them.
- Highly social animals, cetaceans form unusually strong emotional bonds with members of their extended family and pod. Individuals who are separated from their pod suffer emotional devastation, losing their appetite and often their will to live.
- Their social structure, although apparently stable and deeply ordered, does not [illegible]
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FROG FAILURE

Continued from page 15

Frogs are not the only victims. Millions of animals are raised and killed specifically for dissection, including cats and fetal pigs. (Fetal pigs are almost fully developed piglets removed from a pregnant sow after she has been slaughtered.) Providing these specimens to our nation's schools is a huge and highly profitable business for biological supply houses. And mounting evidence suggests that these animals are almost always inhumanely slaughtered. To meet the demand, some cats are seized from animal shelters or stolen from homes. Stray cats have been rounded up in the streets of Mexico, thrown in sacks and embalmed alive before making their final journey to the lab table.

The brutal and senseless slaughter of these animals is not only cruel, it is unnecessary. As more teachers come to understand the ethical issues of dissection, schools are now beginning to conduct lessons in anatomy and physiology using non-destructive means, without sacrificing any academic rewards. And 11 published comparative studies of dissection and other animal uses in education have proven that students learn as well or better using nonanimal methods. A humane classroom not only dispenses knowledge, it fosters compassion, respect and justice for all creatures–perhaps the most important lessons of all.

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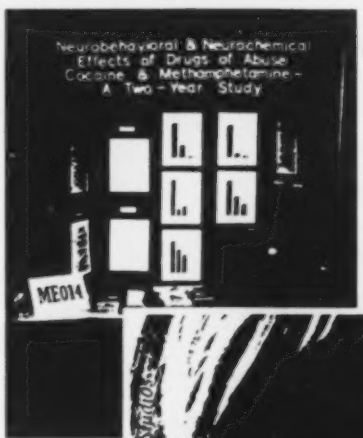
NAVS BULLETIN BRIEF

National Anti-Vivisection Society, 53 W. Jackson, Chicago, IL 60604 1-800-888-NAVS Summer 1997

Hi-Tech Giant Sponsors Animal Cruelty

Intel Corporation, producer of high-tech computer chips, has become the primary sponsor of the largest science fair competition in the world, the International Science and Engineering Fair (ISEF). With participation by over three million high school students worldwide, ISEF continues to award prizes to high school students who perform painful experiments on live animals. Intel, beginning with the 1997 INTEL ISEF Competition, awarded prizes of $40,000 to each of three students whose projects were chosen from 1089 finalists in Louisville, Kentucky, this May.



The National Anti-Vivisection Society and others have repeatedly asked Science Service, the administrator of ISEF, to establish more humane guidelines for projects entered into the competition. NAVS then turned to the sponsors of the competition to exert their influence to change the rules. But Science Service remained unheeding of requests from Kodak, Phillips Petroleum and other sponsors that requested reform.

How can children be taught to respect their nonhuman friends while encouraged to exploit them as research tools?

When approached in the past by NAVS, Intel refused to take a stand on animal experiments, stating that the awards that Intel sponsored were for projects that did not involve live animal research. However, that has changed as Intel took over the primary sponsorship of ISEF. Intel can no longer disassociate itself from the fair's regulations and the pain, suffering and death caused to animals by some fair participants.

Why is it so important to have humane guidelines for high school students developing projects for science fairs? Below are a few projects that students performed on animals for the INTEL ISEF this year:

- Mice were exposed to varying concentrations of melatonin, to evaluate the effects on their immune systems at various ages. The mice were then killed to study the effects on cells and the spleen.
- Rats were injected with cocaine and methamphetamine, then killed to study the neurochemicals dopamine and serotonin in the brain.
- Rats were injected with alph-chloralose urethane anesthesia, then an incision was made exposing three ribs. Muscle tissue around the ribs was damaged, HRP was injected into damaged muscle, then the rats were sutured. 24 hours later, more incisions were made. The rats were anesthetized and then killed.
- Mice were injected with lithium chloride or sodium chloride (control group) and then killed to evaluate their spleens and kidneys. Other mice received daily injections for four more weeks.
- And in one particularly offensive project, a control group of planaria (earthworms) were not fed for four weeks, then were placed together with well-fed planaria to confirm documentation that planaria would resort to cannibalism when insufficient food is available.

These are just some of the experiments presented at the final exhibition of ISEF. Only about 1000 entries of the three million entered in local affiliated fairs actually reach the international competition. That means that—at a minimum— thousands of animals suffer every year at the hands of students or their mentors in pursuit of scholarship money and other prizes. *—Continued*

Order Your *Personal Care* Wallet Guides Today!

A pocket edition of the 8th Edition of *Personal Care for People Who Care* is now available, including hundreds of companies that do not test their products on animals.

The Wallet Guide includes new companies that have been added since publication of the *Personal Care* book in 1996 and is much more convenient to take along shopping. Stock up now! The cost to members is $2.00 per guide ($4.00 for nonmembers).

Intel Can Make a Difference

... And You Can Tell Them How

Intel Corporation is in a position to save the lives and prevent suffering of thousands of animals every year. All they have to do is institute new guidelines for the INTEL ISEF competition to prohibit projects that harm or kill animals.

Your letters to the president of Intel Corporation and the president of Intel Foundation can help make a difference.

Write to:

Mr. Craig Barrett
President
Intel Corporation
2200 Mission College Boulevard
Santa Clara, CA 95052-8119

and

Mr. Peter Broffman
President
Intel Foundation
5200 N.E. Elam Young Parkway
Hillsboro, OR 97124-6497

Sample letter:

Dear Mr. Barrett,

The Intel Corporation, as the official sponsor of the INTEL International Science and Engineering Fair, is in a key position to ensure that the regulations of the INTEL ISEF do not allow animals to be harmed or killed for students' projects. It is very disturbing that live animals are exposed to radiation, shocked, injected with harmful substances and killed for INTEL ISEF projects.

As you may know, Westinghouse Science Talent Search changed its regulations to prohibit live vertebrate animal experimentation 28 years ago! Intel is now in a position to influence the policies of ISEF and Science Service, which administers the international competition. As a company that looks to the future and the benefits technology can bring, use your influence to encourage students to look for alternatives to the harmful and cruel practice of using live animals for experimentation.

Please do not reject this opportunity to promote a long overdue policy encouraging respect for living creatures, human and nonhuman alike.

Sincerely,
(Your name)
CC: NAVS

Continued from page 1

It must be noted that while a few of these projects did win prizes, including scholarship monies, cash prizes and trips to Australia and Israel, there were many other prize winners whose projects embraced science and engineering without harm to animals

There is widespread acceptance of humane standards for high school science fair projects, developed and endorsed by Westinghouse for its prestigious Science Talent Search. Westinghouse changed its regulations in 1969 after sparrows were starved and blinded by a youngster for the competition.

With its new status as the official sponsor of the INTEL ISEF, Intel is in the same position as Westinghouse, and now has the power and ability to ensure that the regulations of the INTEL ISEF prevent harm to animals. Intel is in a position to make a difference. ■

DOD Funding Supports University Cruelties

by Donald J. Barnes, Senior Research Analyst

Most Americans have no concept of the scope of Department of Defense-funded biomedical research with animals. Such efforts are not restricted to laboratories on Air Force, Army or Naval bases, but they may in fact be going on at your local university. Even the most elite universities such as Harvard, Yale, and Stanford, The University of Pennsylvania, and the many laboratories of the University of California system are funded in part by the DOD. This research often has little to do with those areas traditionally considered the realm of the military.

While the National Anti-Vivisection Society opposes invasive animal experiments under any conditions, it is unconscionable that public monies are funneled through the military that neither serve a valid military nor a public purpose. It is these kinds of scientific and fiscal inconsistencies and redundancies which should be noted and eliminated through congressional hearings and investigations.

✘ At **Yale University,** scientists spent **$158,150** in FY 1995 to study the "Stress-Induced Enhancement of the Startle Reflex" in rats.

✘ Researchers at the **University of California, San Francisco,** opened the skulls of domestic cats and attached electrodes within the auditory cortex, to measure how stimuli impacted the cortex of an awake animal. Funded by the Office of Naval Research at **$180,000** in FY 1995.

The 1996 International Science and Engine

by Elinor Molbegott, NAVS Science Fair Consultant

Rats were injected with morphine, appetite suppressant drugs, injected with a solution to induce an allergic reaction, placed in a chamber where they were subjected to vibrations and light, injected with cocaine, injected with drugs and lesioned, and implanted with a stimulant to induce weight loss. Mice were confined to total darkness and total light, cervically dislocated, and had their spleens extracted. Tadpoles were exposed to varying temperatures of water and crude oil. All of these experiments were performed by high school students who were *honored* for their work. They were among the finalists at the 1996 International Science and Engineering Fair (ISEF) held in May in Tucson, Arizona.

ISEF, administered by Science Service, Inc., a Washington D.C.-based not-for-profit corporation, attracts over one million high school students from around the world, although most of the finalists are Americans. The students start out in local and regional ISEF-affiliated fairs and the finalists compete annually at ISEF. Like all science fairs, ISEF provides youngsters with an opportunity to expand their learning and to develop a greater appreciation of science. The finalists at ISEF also get the opportunity to meet people from around the world, make new friends and present their work to thousands of interested onlookers. It seems incongruous that behind the scenes, sentient animals were caused untold pain and suffering for ISEF.

As is the case every year, busload after busload of young students, as well as teachers and people from all walks of life, came to look at the finalists' work at the 1996 ISEF and to speak to them about their projects. I was there too, but for a different purpose than most. I went to ISEF as a representative of NAVS, although no one at the fair knew that. The purpose of my visit was to see if the ISEF's past practice of honoring students who perform projects involving pain and suffering to animals was still in place. It was.

Actually, that came as no surprise. In fact, ISEF's rules have not been substantially changed to better protect animals in years. Science Service has worded the ISEF rules to give the pretense of concern while still allowing all sorts of horrible things to take place, such as exposing animals to carcinogens, radiation, nutritional deficiency, physical stress, drugs, and surgery. The students who presented their projects did not violate the ISEF rules. Rather, the rules gave them approval that they needed to cause harm.

Many of the finalists stood by their project booths eager to tell all who would listen about their experiments. One student, in particular, stands out in my mind. She told a crowd of 10-year olds who came to the fair how she repeatedly injected rats with drugs and placed them in the chamber that was conspicuously displayed at her project booth . She told the group how the rats developed hive-like symptoms and how, even when she stopped the injections, the rats still developed hives when placed in the chamber. She mentioned that the rats were still alive and she would either return them to a university or give them to a friend to feed to his snake.

The student won a second place award from Science Service, an honorable mention from the American Psychological Association, and a fellowship from the National Institutes of Health.

The onlookers gasped, gawked, laughed and moved on. One couldn't help but wonder what educational lesson they had learned from hearing about an animal's suffering. That it's okay to harm animals? That you can win awards for causing pain? What's more, what value was it to the student who performed this project? Weren't there other projects that a bright young student could do that did not involve harm? And, why was Science Service allowing this to take place? Clearly, ISEF would be able to exist without projects which involve pain and suffering to animals. Amidst the cruelty were aisle after aisle of projects that focused on energy, water management and conservation, ecology, pollution, agriculture, botany, computer science, aeronautics, astronomy, mathematics, photography, and much more. The vast majority of projects did not involve harm to living animals. Yet Science Service has thus far refused to listen to requests for change, even by one of its long time sponsors, Eastman Kodak Company, who, at the request of NAVS, adopted its own more humane criteria to use when evaluating ISEF projects. In fact, when the National Association of Biology Teachers (NABT) asked to be one of the ISEF sponsors, Science Service refused because NABT's guidelines on the use of vertebrate animals by high school students are more stringent than the ISEF rules.

One would think that in this day and age youngsters would not be encouraged or allowed to cause pain and suffering to animals. With all of the violence in our society, one would think that those projects that let students to use their intellects, imagination and talents would be encouraged and that experiments that entail causing pain and suffering would not be permitted. Yet, in actuality, while several states have already passed laws prohibiting such experiments, many others have not—leaving the door wide open for inhumane experiments at science fairs whose rules permit them.

It has been 27 years since the Westinghouse Science Talent Search banned live vertebrate animal experimentation by high school students (after sparrows were starved and blinded for

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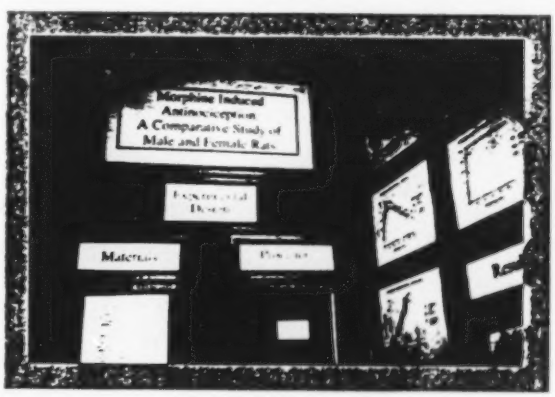
ering Fair: A Showcase of Cruelty

a project). Yet decades later, Science Service still refuses to make changes to the ISEF rules that would ensure that vertebrate animals are not harmed for science fair projects. Part of the problem appears to be that since Science Service, unlike Westinghouse, is not a consumer-oriented company, it does not have the same concerns that such public companies have. Science Service does not have to worry that customers will be upset and stop buying their products if they hear about a policy that appears to condone the killing of animals. Rather, Science Service knows that the public generally sees science fairs as a positive experience for students, an opportunity to learn and use their talents. Science Service also knows that the public generally does not know that youngsters are harming animals for science fair projects. This needs to change. The ISEF sponsors and Science Service's Board of Trustees have to be accountable.

Despite the fact that NAVS alerted many of the major corporate ISEF sponsors and Science Service Trustees about the cruel animal experimentation that has been presented at ISEF, they have refused to use their influence to ensure more humane ISEF rules. These sponsors include Intel, NYNEX, Panasonic, Merck, and the AARP's (Association for the Advancement of Retired People) Andrus Foundation. Clearly, as primary sponsors, they would be in a key position to object to rules that promote cruelty. One would think that they would not want to be part of a program that allows youngsters to harm animals, even if they do not specifically give awards for such projects.

With their combined influence, undoubtedly Science Service would have to listen. But Intel said it would be "inappropriate for it to direct others whose expertise exceed our own." AARP said it was "satisfied the Science Service is ensuring us that student projects are not using experimental procedures that cause unnecessary pain or discomfort to animals." Panasonic wrote that "it appears to be a subject that...ISEF has tried to monitor and control through their rules, which have the support within the community of both scientists and science teachers." All of this was said by these corporations after they were informed specifically about the ISEF students' projects which included electrically shocking animals, tying rubber bands around rats' tails, injecting animals with steroids and other drugs to see the resulting abnormalities, exposing animals to darkness for extended periods of time, placing mice on record players, feeding gerbils NoDoz and Kool-Aid, forcing animals to dive into and remain in water, and more. None of the Science Service Trustees to whom NAVS wrote responded at all.



More needs to be done to stop the cruelty, to stop the next generation of young scientists from looking at animals as mere tools to be exploited, regardless of the benefits to be derived. Few people could reasonably argue that a teenager's animal experiment involving pain and suffering will save human lives. But Science Service appears relentless in its unwillingness to change its rules to ban invasive animal experiments. Is it simply to challenge the animal rights movement? Is it Science Service's belief that somehow youngsters benefit from hurting animals? Is it the attitude that it is more important for students to do what they want, even if sentient creatures are harmed in the process? Whatever the reason, we need to change the rules and you can be a part of the effort to make our educational system one that promotes compassion and humanity, not violence, towards our fellow creatures.

WHAT YOU CAN DO

- Write to Science Service Inc. at 1719 N Street NW, Washington, D.C 20036 and ask that the ISEF rules be changed immediately to prohibit live vertebrate animal experimentation that can cause harm to the animals, including projects that involve shocking animals, injecting them with drugs, carcinogens and tumors, depriving animals of needed nutrients, surgery and any other potentially harmful procedures.

- Write to current ISEF corporate sponsors:

Intel Corporation at 5200 N.E., Elam Young Parkway, Hillsboro, Oregon 97124-6497;

NYNEX at 1095 Avenue of the Americas, New York, New York 10036;

Panasonic at Matsushita Consumer Electronics Company, Executive Offices, One Panasonic Way, Secaucus, New Jersey, 07094; and

AARP Andrus Foundation at 601 E Street, N.W., Washington, D.C. 20049.

Tell them that you are outraged that they have refused to demand changes to the ISEF rules to ensure that no vertebrate animal is harmed by the participating youngsters and ask that they immediately use their influence to secure the necessary changes. Let them know that you will stop buying their products/using their services if they do not act swiftly to stop the cruelty.

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